STATE OF NEVADA

GRADE H

Nevada

HIGH SCHOOL PROFICIENCY EXAMINATION

REVIEW GUIDE

999-8187-97-4

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INTRODUCTION

Purpose

The legislated testing program (Nevada Revised Statute 389.015) is designed to provide a means by which students may demonstrate academic proficiency. It is not intended to be punitive but to help ensure that students are appropriately prepared to move beyond high school and become successful adult citizens. Because of this, the tests are designed to measure proficiency relative to the state's challenging content standards. In fairness to students, multiple opportunities to pass each examination are provided.

This review guide is intended to be used by teachers, principals, and school districts as a supplemental tool — one that complements current efforts aimed at preparing students for the state high school proficiency examinations and/or remedial efforts based in part on student test performance. Although the guide provides a sampling of representative items for the high school examinations, the sample of items does not constitute a practice test and was not designed to provide "drill" activities.

The high school proficiency examinations in Reading, Writing, Mathematics, and Science carry with them "high stakes" for students. Students must pass each examination as a graduation requirement. Each test includes only a sample of the curriculum content that students are expected to know when they exit high school. Integrating this with the need for fairness to students makes it necessary to build multiple forms of each subject area examination.

While it is impossible to design exactly parallel test forms, careful construction assures that each form of the test is created to match previous forms in terms of content and overall difficulty. Statistical studies are conducted to support these developmental efforts in ensuring the "equivalence" of forms. For example, after the development of the first "live" test form, subsequent forms can be nearly identical in terms of difficulty, being slightly easier or slightly more difficult. Statistical equating studies enable the state to take into consideration differences between forms when making pass/fail distinctions. For those forms that prove to be slightly more difficult than others, students are required to answer fewer questions correctly to pass the examination. Likewise, for slightly less difficult forms, students must correctly answer more questions to demonstrate proficiency.

This discussion of test construction is provided to underscore the intent of this review guide. Because multiple test forms are administered and each test form constitutes a sampling of content, it would be misleading to simply provide a listing of practice questions. Instead, efforts have been made to provide representative items with an explanation of which content skill an item is measuring, how the item may be altered to assess related knowledge, and/or how items designed in different ways may measure the same information.

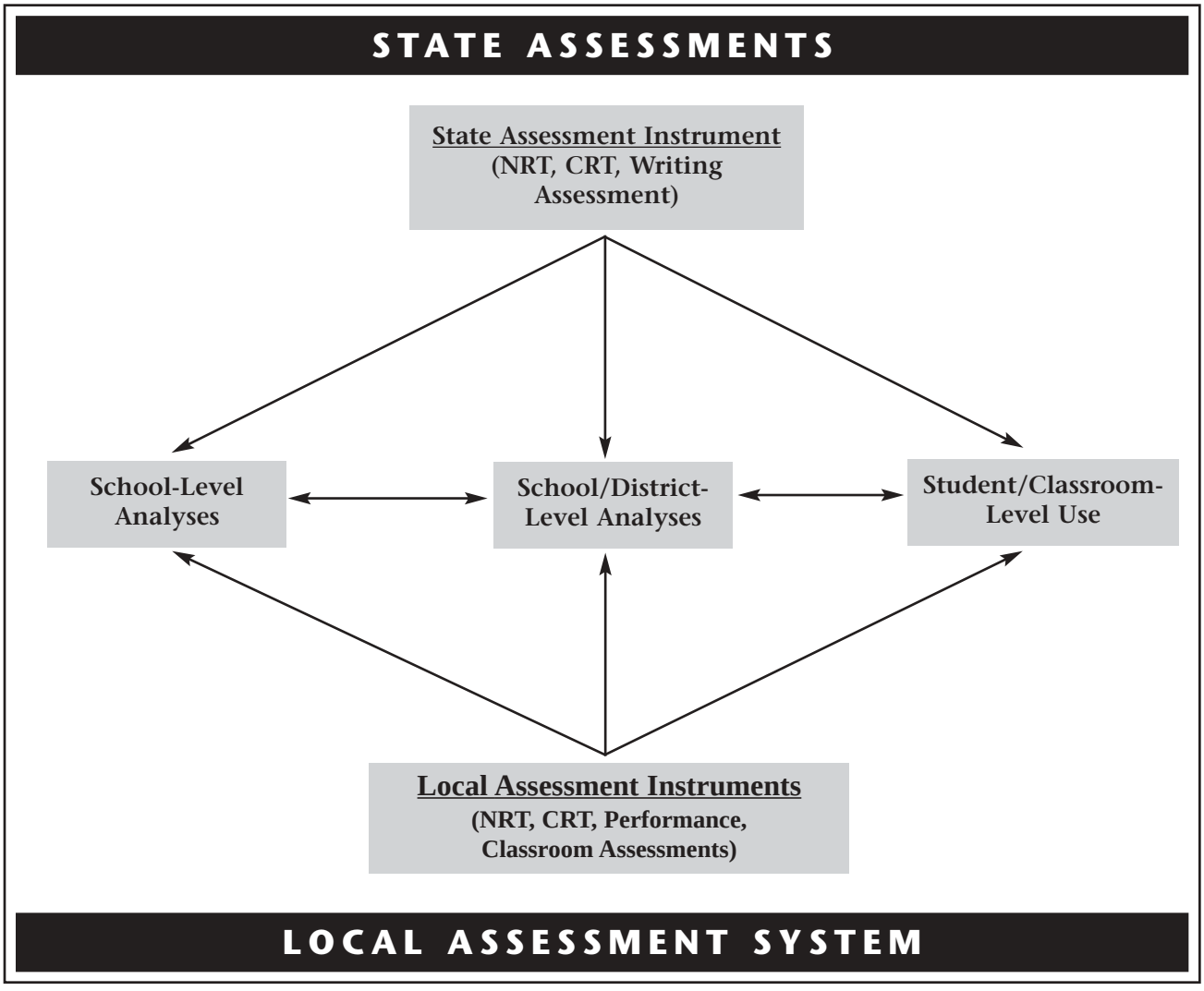
Rationale and Philosophy

The Nevada comprehensive assessment system serves as an ongoing evaluative technique that allows monitoring of the extent to which students are acquiring necessary knowledge and skills. While necessary knowledge and skills may be characterized in multiple ways, they are primarily defined through the state content and achievement standards, which are implemented through the use of aligned curriculum and through instructional practice.

Assessment can be viewed as multi-faceted. It can be considered as an objective monitoring tool that stands outside the triangle of standards, curriculum, and instruction. It can also be regarded as an integral aspect of curriculum and as an instructional tool. It may be that different assessment strategies can serve these multiple facets. If so, as is the case with standards, curriculum, and instruction, multiple forms of assessment, including varied large-scale assessments administered at both state and school district levels as well as site-based assessments administered at the school- and classroom-level, must be interlocked or aligned. As such, Nevada's assessment efforts are part of statewide systemic reform.

Since each form of assessment taken individually may serve a narrower purpose, each assessment must be considered in conjunction with all other forms of assessment. This conceptualization is consistent with the adage that the whole is greater than the sum of its parts. Each form of assessment provides useful bits of information, but the interpretation of student and school achievement is better informed by looking at the influence of multiple measures (see Figures 1 and 2).

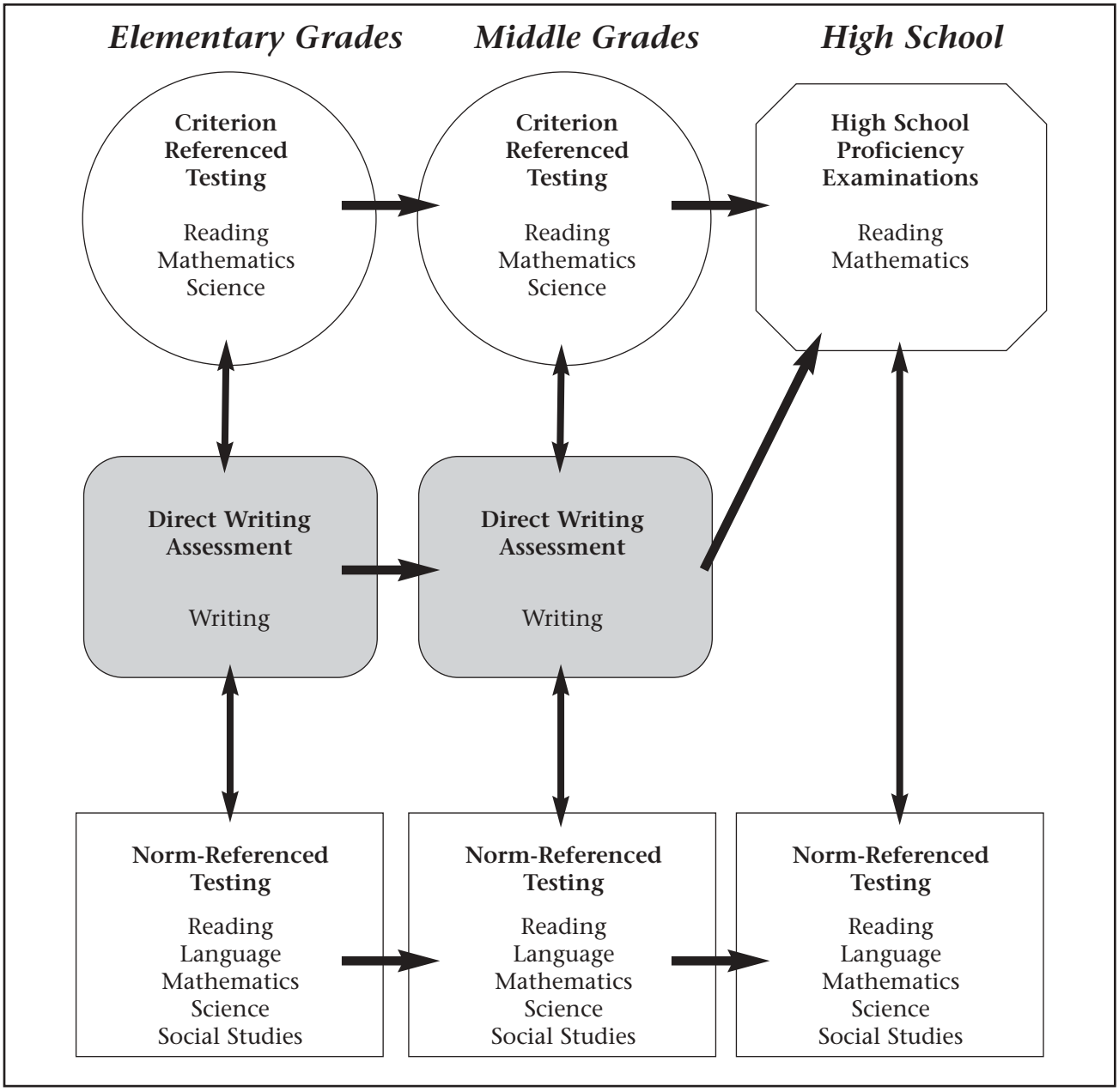
Figure 1 — A Complementary System Of State-, Local-, And Building-Level Assessment Practices



Norm-Referenced Assessment

The norm-referenced assessments, as described in Nevada Revised Statute 389.015, are administered annually each fall to every Nevada student in grades 4, 7, and 10. Subjects tested include reading/language arts, mathematics, science, and social studies. The current testing contractor is Riverside Publishing Company, and it is responsible for the distribution and scoring of the Iowa Tests of Basic Skills in grades 4, 7, and 10. For more information about the Iowa Tests of Educational Development in grade 10, go to http://www.riverpub.com/products/group/ited_a/home.html.

Figure 2 — State-Level Assessment Flow



Accountability and Alignment

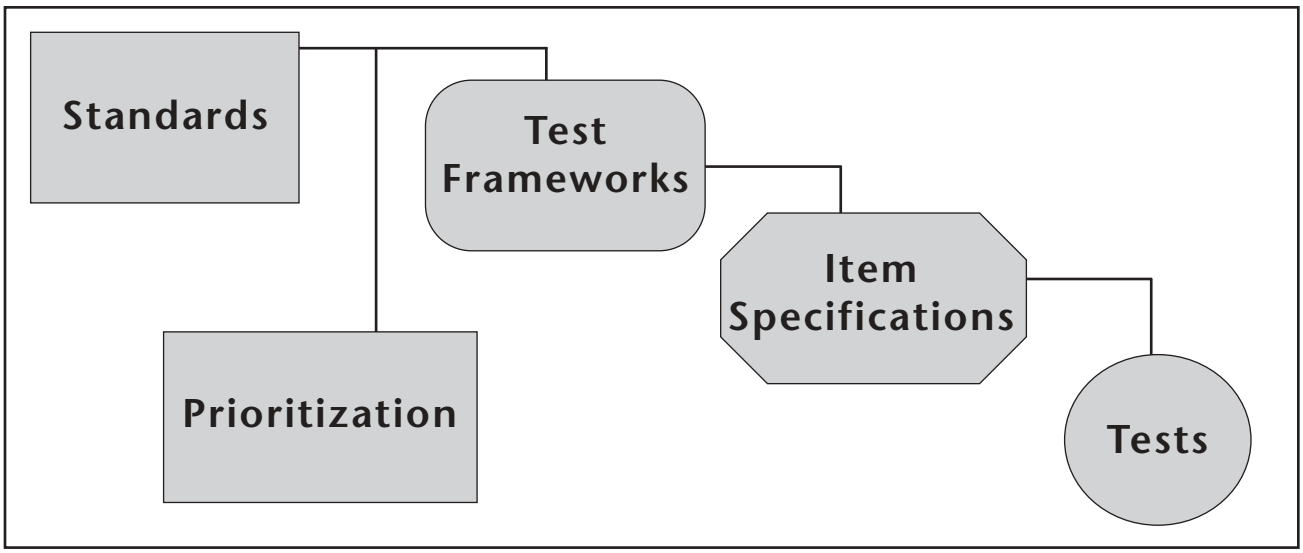
Current reform initiatives, most recently the federal *No Child Left Behind Act,* are predicated on the notion of "results-based" accountability. Stated simply, students are responsible for learning standards-based content knowledge and skills, and educators are responsible for providing students with the opportunity to learn and to demonstrate that knowledge and those skills. Current accountability efforts are based on a "carrot/stick" mentality whereby those who succeed as defined by the accountability rules are rewarded for their efforts and those who fail are penalized.

The most visible type of accountability measure is the requirement that students pass state-administered examinations in order to receive a diploma. The reward is the diploma and the penalty is not receiving a diploma. Of course, there are less formal penalties or consequences associated with failing the examinations, such as stigma brought on by peer awareness and/or personal shame of "failure."

This much is known about accountability systems and the role of assessments: When the stakes are high, whether applied to students or to schools, the assessments drive classroom instruction and/or behavior, and there is motivation to perform well on the accountability measures. Directing instructional change can be desirable and is arguably the goal or role of accountability. How assessment affects instruction or curriculum is a key concern and leads to the issue of alignment. Unless the assessments are clearly aligned with academic expectations (standards) the effects of accountability cannot be reliable.

For assessments and the accountability system to support the overarching goals of improving student learning and school improvement, the assessments must measure the standards. Unfortunately, the language of "standards" is not always easily applied to assessment or measurement. Work must be done to translate the standards into a form that is conducive to assessment without compromising academic expectations. This can be achieved in multiple ways and has been accomplished in Nevada using the following method (See Figure 3).

Figure 3 — Translation is one step in the alignment



The articulation of standards into a form appropriate for school- and classroom-level assessments serves multiple roles. It provides a clear roadmap for constructing test items/tasks. By this, there is some assurance that at the state level, measurements are aligned with expected proficiency of student performance based on the prescribed state standards. In addition, it supports the development of school district/classroom assessments that are aligned to both the state academic expectations and other forms of assessment that make up the total assessment system. Aligning different assessment types is required to achieve systemic reform.

The articulation of standards, ultimately in the form of assessment, also helps serve another critical purpose. The process serves to share with all educational stakeholders, and in particular students and parents, what is expected from students in the form of knowledge/skills acquisition and what is expected from schools in terms of curriculum and instructional delivery. Students, parents, and teachers must know what the expectations are, how they will be assessed, and the decisions that will be made based on student performance.

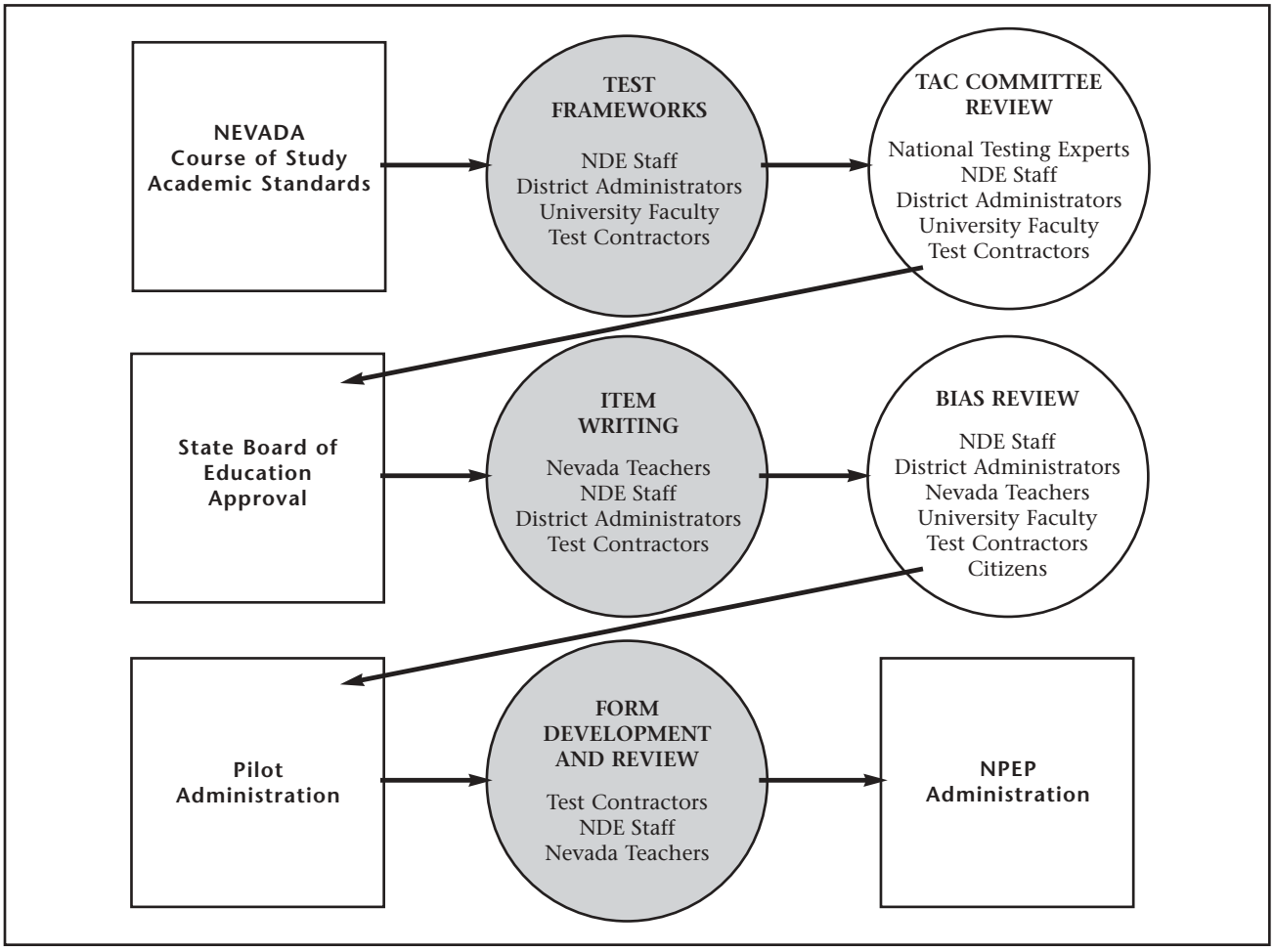
One of the critical features of the articulation of standards in Nevada has been the prioritization of standards. After the standards were written and adopted, educators from across the state were brought together to make decisions regarding the assessment of the standards. Groups of teachers and other educators had the task of taking each standard and objective and noting whether it was indicative of an "enduring," "important," or "worthwhile" knowledge/skill. Next, educators indicated whether a standard/ objective might best be assessed at the state or local level. This process resulted in a clear subset of standards/objectives that were enduring/important and state testable.

The prioritization process is important for several reasons. First, the breadth and depth of the Nevada content standards make it very difficult to provide a comprehensive assessment. Second, although a lengthy assessment process might be seen as optimal, cost and time spent testing are practical constraints. Third, the prioritization process allows for a finer distinction in those aspects of the standards essential for state assessment. This, of course, is a critical undertaking. As stated previously, testing will direct curriculum and instruction and any narrowing of curricular scope could be detrimental to including all the standards in classroom instruction. It is important to note that the prioritization process did not exclude any of the standards/objectives from assessment. Instead, it called for the assessment of all standards/ objectives at the local level, and a specified set of knowledge/skills to be assessed at the state level.

Development

The test development process for state assessments is comprehensive and involves national and local educators, as well as technical assistance from regional education laboratories and testing contractors. Shown in Figure 4 is the general development process. It starts with the state standards followed by the development of test frameworks and specifications and the review of these documents by a Technical Advisory Committee (TAC) and policy boards. After approval, Nevada educators begin the item writing process, which includes the construction of items/tasks and the qualitative bias review of test items/tasks and reading passages. Once written and reviewed, items are subjected to a field administration where the items are field-tested with students. Based on a statistical and qualitative review of the piloted items, test forms are constructed, submitted for a comprehensive review, and ultimately formally administered to students.

Figure 4 — The NPEP Development Process



The cornerstone of the development process of the Nevada Proficiency Examination Program is teacher involvement in the writing and reviewing of test items. Prior to writing items, teachers are provided with a thorough training that is designed to assist in writing quality items that are free from bias and that are clearly aligned to specific prioritized content standards. Throughout item writing sessions, time is dedicated to peer review of item drafts, including validation of the matching of items to specific content skills.

After items are written, they are edited by a testing contractor and subsequently submitted for a comprehensive, qualitative review for potential bias. Although a variety of educators and other citizens are involved in the review process, teachers always serve in this primary role. Items are analyzed to ensure they do not convey insensitivity to a particular group, do not violate privacy issues, and do not differentially impact opportunity and access. Reliance on teacher involvement in the writing and review process provides confidence that the high school proficiency examinations accurately measure content being taught in Nevada classrooms.

Reporting

In order for assessments to serve the purposes of improving student learning and classroom instruction, assessment results must be reported in a manner that facilitates the interpretation of student performance. The reporting of results must be tied directly to the expectations for student learning.

The state provides a variety of score reports in paper format including student, school, district, and state level summary reports. Additionally, "raw" data is provided to school districts in electronic format to allow for more precise analyses. The integration of results from the multiple levels of assessment (i.e., state vs. classroom) requires the use of electronic media. The state is currently pursuing the adoption of web-based reporting software that can make the "raw" data available in varying degrees of specificity to all education stakeholders. In particular, teachers would be able to access data representing their own classroom, school, and/or district.

Although the electronic transfer of results is optimal, the paper reports disseminated by the state must still convey important information with clarity. The student level summary report conveys both diagnostic and general achievement information (see Figures 5a and 5b). It provides information pertaining to the number of items possible, the number of items correct, and the percentage of items answered correctly relative to a particular content standard (i.e., in Reading, *Read to Comprehend, Interpret and Evaluate Literature,* or in Math, *Algebra and Functions*). In addition, it provides information on the cognitive domain (i.e., in Reading, *Developing an Interpretation* or in Math, *Procedural Knowledge*).

The scale score obtained by the student is specified at the top of the score sheet and a key is provided at the bottom qualifying the achievement levels by descriptors of the scale scores, i.e., emerging/developing, approaching standard, meeting standard, or exceeding standard. The scale score is derived by mapping each raw score to a scale score through a linear transformation process where student ability, test difficulty, and student guessing are factored into the equation. The cut scores for *Approaches Standard* and for *Meets Standard* were established during the Nevada Standard Setting process in 2002. The *Exceeds Standard* cut is also fixed, but may vary minimally for each test. While the raw score percentage correct required to attain each achievement category may change from year to year and may differ from subject to subject, the scale score cuts remain constant. As a result, for some test forms or subjects, students could receive relatively high percentages of correct answers and not meet the standard, while with other forms they could receive relatively moderate scores and could meet or even exceed the standard, depending on the difficulty of the test form and the achievement level cuts established in the standard setting process.

The number/percentage correct information provided on the Student-Level Summary Score Report has limited diagnostic value. For a particular administration, it does indicate performance relative to the more specified content areas; but the limited number of questions related to any particular standard or domain, in addition to the number of skills encompassed within the standard, prevents a highly reliable estimate of performance. However, if this information is combined with classroom-based information, a strong diagnostic picture can be created. For example, if a student correctly answers 5

of 10 items pertaining to *Numbers and Number Sense* on the state test, it would suggest some relative weakness. However, because each test form is but a sampling of content from the standards, it is important to validate the state level performance information with classroom level information relative to *Numbers and Number Sense* (assignment grades, class quizzes, teacher observation, etc.) before major remedial efforts would be implemented for any student.

Figure 5 — Student-Level Summary Score Report

HSPE

NEVADA HIGH SCHOOL PROFICIENCY EXAMINATION

Student Report

GRADE: 12

Purpose

This report provides information about performance on the Nevada HSPE. It should be used for instructional planning, as a point of reference during a parent-teacher conference, and for permanent record keeping.

Nevada DEPARTMENT OF EDUCATION

Birthdate:
ID Number:

SERIES 1998

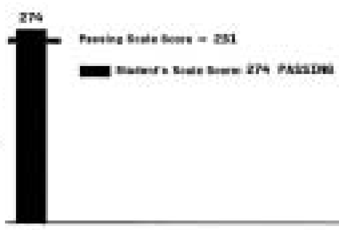
Test Date: 11/04/02

School:
District:
State: NEVADA

City/State:

Reading

Total Test Scale Score



Subtests (Each item contributes to (or is scored as part of) the Content Strand score and the Ability score)	Number of Items Possible	Number of Items Correct	Percent of Items Correct
Reading Content Strands			
C1 Word Analysis Skill & Strategies	12	10	83%
C2 Read to Comprehend, Interpret and Evaluate Literature	16	11	69%
C3 Read to Comprehend, Interpret and Evaluate Informational Text	26	17	65%
Reading Abilities			
A1 Forming an Initial Understanding	15	10	67%
A2 Developing an Interpretation	28	21	75%
A3 Demonstrating a Critical Stance	11	7	64%

Explanation

Before a student can receive a standard diploma, he/she must pass the Nevada High School Proficiency Examinations in Reading, Writing, and Mathematics. In addition, the student must meet all state credit requirements and any additional graduation requirements that have been established by the local school district.

What can a student do if he/she does not pass the test?
When a student receives these results, they will help him/her determine if he/she needs to work harder in any areas. To better prepare for the next examination, a student might talk to teachers about additional work to do to practice for the test. The student may also wish to talk to a school counselor about different courses to take during the summer or the next school year. Remember that many students in Nevada will have to take some or all of these tests more than once in order to pass.

What do the scores mean?
The number of items possible is the number of questions in that category. Next is the number of items correct for that category. And finally, there is a percent correct score that tells the percentage of those items that were answered correctly. See the enclosed sheet for a description of each subtest.

Different versions of the High School Proficiency Examination are given each time the test is administered. Each version is written to be equally difficult, but different items cause slight variations in the overall difficulty of the tests.

In order to ensure that the standards students are required to meet do not change from one test to another, each form of the test is equated to a common standard so that the students taking a different form of the test are not at a disadvantage. This equating results in a scale score that is used to determine if a student passes or fails. The lowest passing scale score is set by the State Board of Education.

The equating can only be carried out for the total math and the total reading scale score. For this reason the % correct for the subtests cannot be compared to the scale score.

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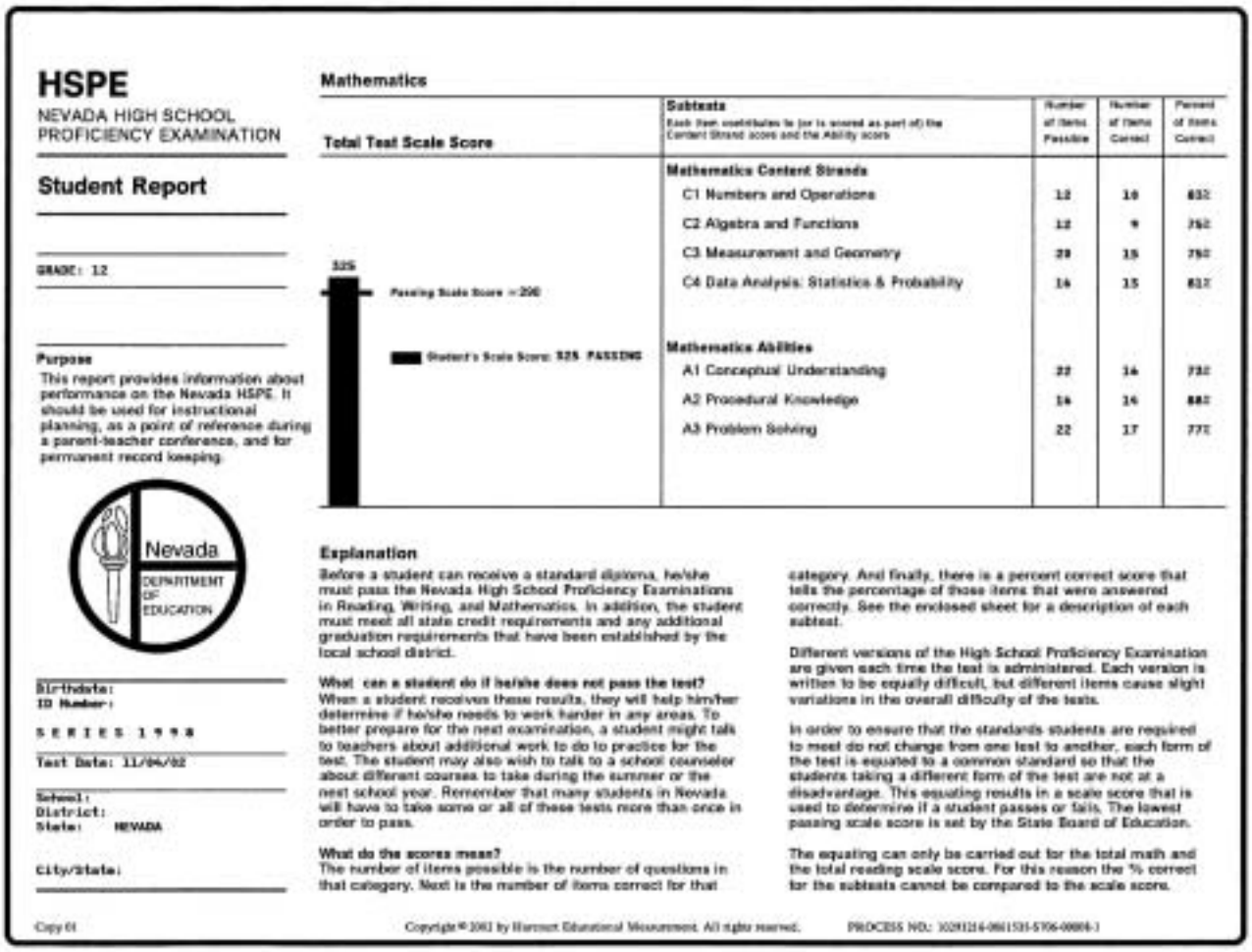
Figure 5 — Student-Level Summary Score Report continued



HSPE
NEVADA HIGH SCHOOL PROFICIENCY EXAMINATION

Student Report

GRADE: 12

Purpose
This report provides information about performance on the Nevada HSPE. It should be used for instructional planning, as a point of reference during a parent-teacher conference, and for permanent record keeping.

Nevada
DEPARTMENT OF EDUCATION

Birthdate:
ID Number:

SERIES 1998

Test Date: 11/04/02

School:
District:
State: NEVADA

City/State:

Copy 01

Mathematics

Total Test Scale Score

325

Passing Scale Score = 200

Student's Scale Score: 325 PASSING

Subtests (Each item contributes to (or is scored as part of) the Content Strand score and the Ability score)	Number of Items Possible	Number of Items Correct	Percent of Items Correct
Mathematics Content Strands			
C1 Numbers and Operations	12	10	83%
C2 Algebra and Functions	12	9	75%
C3 Measurement and Geometry	20	15	75%
C4 Data Analysis, Statistics & Probability	16	15	81%
Mathematics Abilities			
A1 Conceptual Understanding	22	16	73%
A2 Procedural Knowledge	16	14	88%
A3 Problem Solving	22	17	77%

Explanation

Before a student can receive a standard diploma, he/she must pass the Nevada High School Proficiency Examinations in Reading, Writing, and Mathematics. In addition, the student must meet all state credit requirements and any additional graduation requirements that have been established by the local school district.

What can a student do if he/she does not pass the test?
When a student receives these results, they will help him/her determine if he/she needs to work harder in any areas. To better prepare for the next examination, a student might talk to teachers about additional work to do to practice for the test. The student may also wish to talk to a school counselor about different courses to take during the summer or the next school year. Remember that many students in Nevada will have to take some or all of these tests more than once in order to pass.

What do the scores mean?
The number of items possible is the number of questions in that category. Next is the number of items correct for that category. And finally, there is a percent correct score that tells the percentage of those items that were answered correctly. See the enclosed sheet for a description of each subtest.

Different versions of the High School Proficiency Examination are given each time the test is administered. Each version is written to be equally difficult, but different items cause slight variations in the overall difficulty of the tests.

In order to ensure that the standards students are required to meet do not change from one test to another, each form of the test is equated to a common standard so that the students taking a different form of the test are not at a disadvantage. This equating results in a scale score that is used to determine if a student passes or fails. The lowest passing scale score is set by the State Board of Education.

The equating can only be carried out for the total math and the total reading scale score. For this reason the % correct for the subtests cannot be compared to the scale score.

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Figure 5 — Student-Level Summary Score Report continued

READING

Additional information about the Nevada content areas can be viewed at the Nevada Department of Education website, www.nde.state.nv.us. The Nevada High School Proficiency Examination in Reading contains passage selections with a variety of questions ranging in difficulty which test how well a student can perform reading activities based on:

READING CONTENT STRANDS

Word Analysis Skill and Strategies (C1)
- Apply knowledge of roots and affixes to determine meaning of unknown vocabulary.
- Discern subtle differences between closely related words.
- Analyze idioms, analogies, metaphors, and similes to infer literal and figurative meaning.

Read to Comprehend, Interpret and Evaluate Literature (C2)
- Evaluate story elements to determine their importance to a story.
- Make inferences and predictions supported by textual evidence.
- Use textual evidence to analyze the theme or meaning of a selection.
- Analyze and evaluate ways authors use imagery, figures of speech, and sound to elicit reader response.

Read to Comprehend, Interpret and Evaluate Informational Text (C3)
- Use knowledge of text features and common expository structures to comprehend text.
- Locate, organize, interpret, and synthesize information from multi primary and secondary sources to support ideas and positions.
- Read and apply multi-step directions to perform procedures and tasks.
- Draw conclusions from and make inferences about text.
- Summarize author's ideas and information in texts.

READING ABILITIES

Forming an Initial Understanding (A1)
- Assesses the initial understanding of what is read ("reading the lines").

Developing an Interpretation (A2)
- Assesses a more complete understanding of what is read ("reading between the lines").

Demonstrating a Critical Stance (A3)
- Assesses the evaluation and consideration of what is read ("reading beyond the lines").

MATHEMATICS

Additional information about the Nevada content areas can be viewed at the Nevada Department of Education website, www.nde.state.nv.us. The Nevada High School Proficiency Examination in Mathematics will contain items that test how well a student can perform the following mathematical activities:

MATHEMATICS CONTENT STRANDS

Numbers and Operations (C1)
- Understand numbers, ways to represent numbers, relationships among numbers and number systems, and the meaning of operations and how they relate to each other.
- Use computational strategies and tools and estimation techniques appropriately and fluently.
- Apply and adapt appropriate strategies to solve problems that arise in mathematics and other contexts.

Algebra and Functions (C2)
- Understand patterns, relations, and functions.
- Represent and analyze mathematical situations and structures using algebraic symbols.
- Use mathematical models to represent quantitative relationships and analyze change in various contexts.

Measurement and Geometry (C3)
- Understand attributes, units, and applications for systems of measurement.
- Determine locations and describe spatial relationships using coordinate geometry and other representational systems.
- Apply a variety of techniques, tools, and formulas for determining measurements.
- Analyze characteristics and properties of two- and three-dimensional geometric shapes and apply transformations or symmetry to analyze mathematical situations.
- Solve measurement problems that arise in mathematics and other contexts.
- Use visualizations, spatial reasoning, and geometric modeling to solve problems.

Data Analysis: Statistics and Probability (C4)
- Understand and apply basic concepts of statistics and probability to develop and evaluate inferences or predictions that are based on data.
- Select and use appropriate statistical methods to analyze data and verify trends.
- Identify, organize, display, and analyze data to solve mathematical problems and depict trends in various contexts.

MATHEMATICS ABILITIES

Conceptual Understanding (A1)
- Label, define, and compare/contrast concepts and translate from one mode of representation to another.
- Recognize and identify properties of a given concept, and use models, diagrams, and symbols to represent it.

Procedural Knowledge (A2)
- Recognize when a procedure is appropriate, give reasons for steps in a procedure, and accurately execute procedures in a problem situation.
- Verify the results of procedures using analysis and/or models.
- Identify and/or demonstrate the appropriate use of tools (calculators, protractors, rulers, etc.).

Problem Solving (A3)
- Analyze situations to determine common properties and structures, recognize patterns, and form conjectures.
- Apply a variety of combinations of strategies to solve problems.
- Verify conclusions, judge the validity of conjectures, and construct valid arguments.

The school summary report (see Figures 6a and 6b) communicates similar information. The report conveys raw performance in terms of the school's average percent correct relative to each content standard and cognitive domain. Next to the "Number of Items" is the "Reliability Indicator" that refers to the extent to which test scores on items are consistent based on statistical analyses. The report also provides a standard-by-standard, domain-by-domain comparison between the school and the school district as well as a bar chart denoting a comparison between the school and the district in terms of pass rates. Disaggregated data on student performance by major subpopulations is also provided. This includes average scale score performances as well as pass rates by gender, major ethnic groups, students with disabilities, students with limited English proficiency, and students with low socio-economic status.

Figure 6 — School-Level Summary Score Report

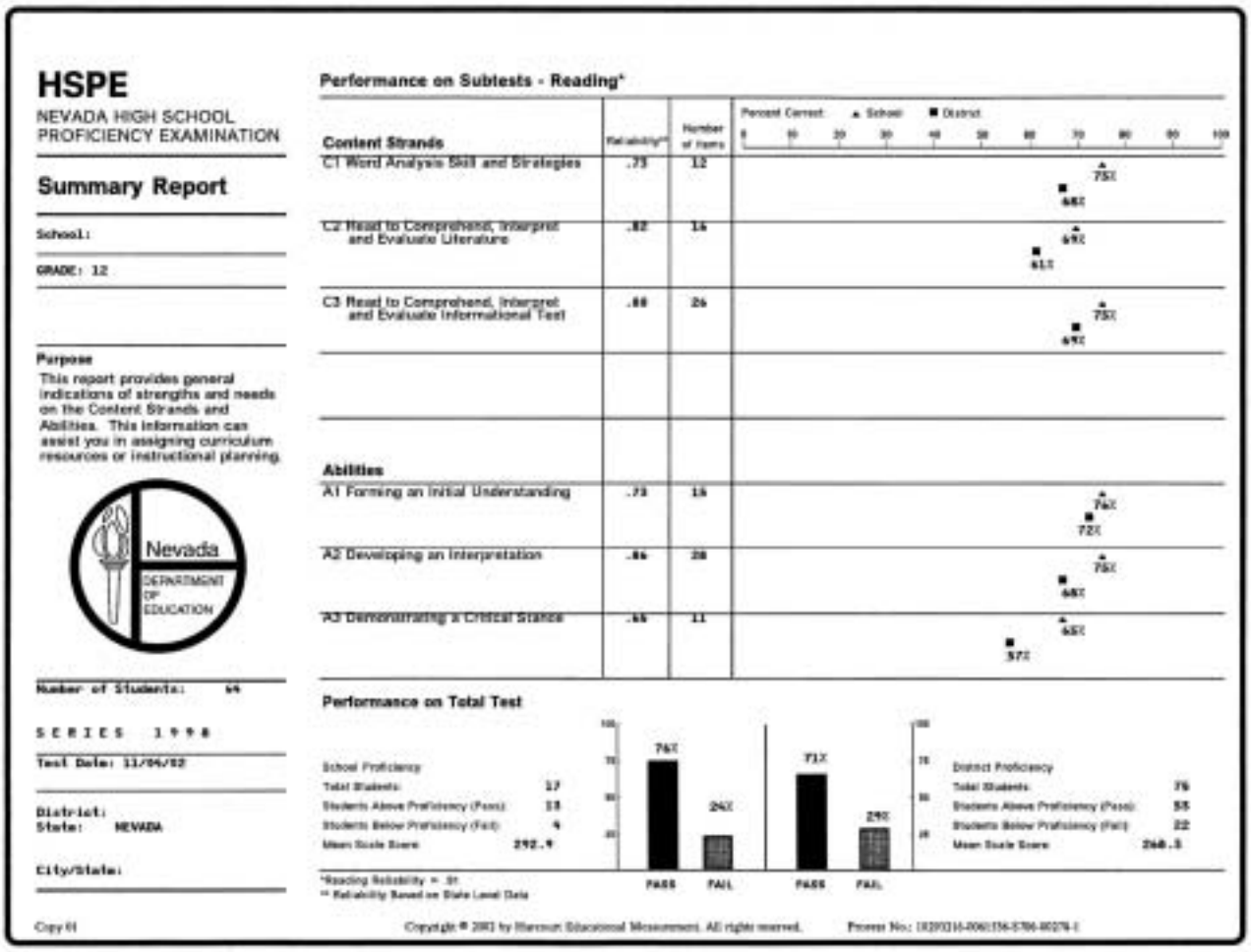
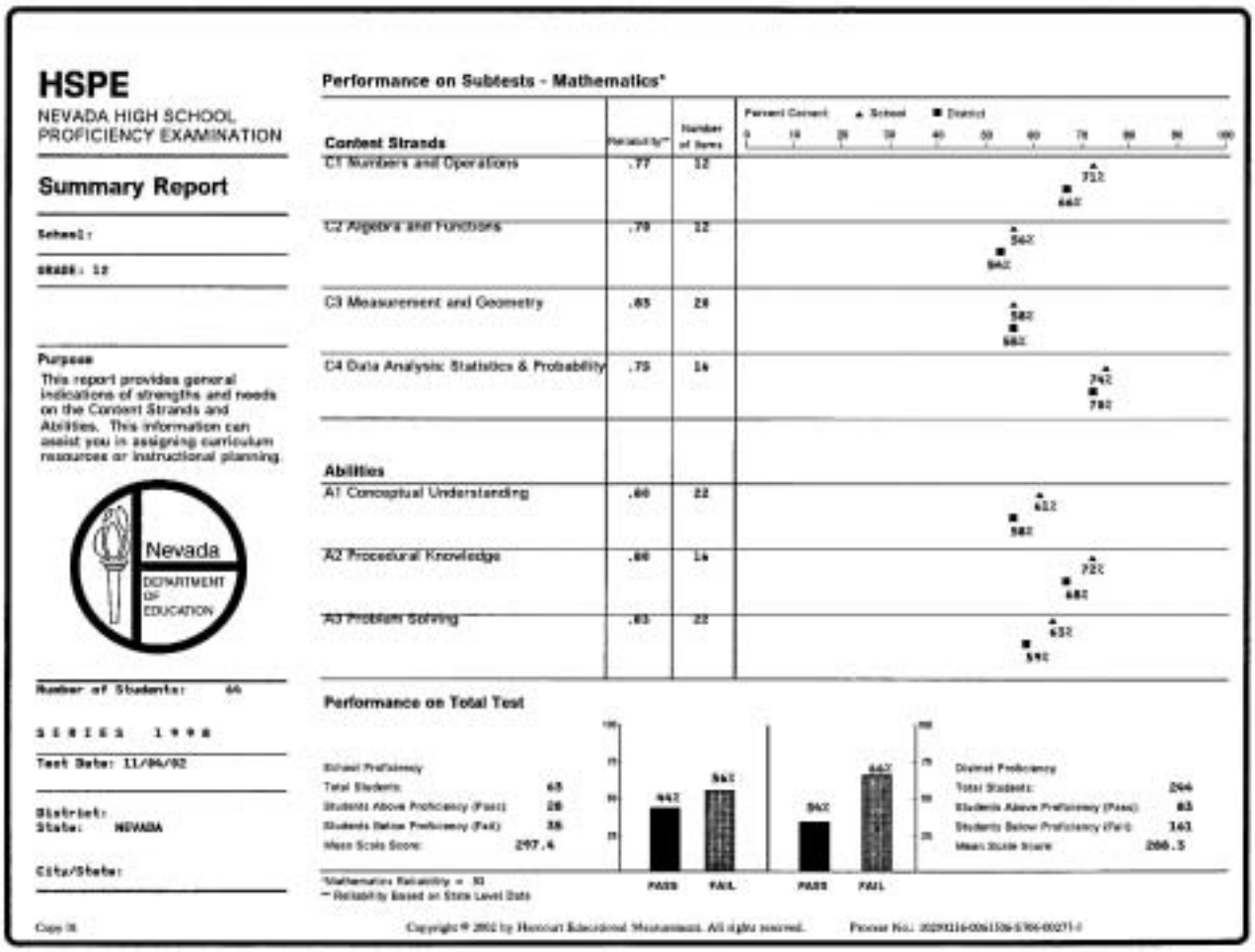


Figure 6 — School-Level Summary Score Report continued



HSPE
NEVADA HIGH SCHOOL PROFICIENCY EXAMINATION

Summary Report

School:

GRADE: 12

Purpose
This report provides general indications of strengths and needs on the Content Strands and Abilities. This information can assist you in assigning curriculum resources or instructional planning.

Nevada DEPARTMENT OF EDUCATION

Number of Students: 44

SERIES 1998

Test Date: 11/04/02

District:
State: NEVADA

City/State:

Performance on Subtests - Mathematics*

Content Strands	Reliability**	Number of Items
C1 Numbers and Operations	.77	12
C2 Algebra and Functions	.79	12
C3 Measurement and Geometry	.65	28
C4 Data Analysis, Statistics & Probability	.75	16
Abilities		
A1 Conceptual Understanding	.60	22
A2 Procedural Knowledge	.68	14
A3 Problem Solving	.83	22

Percent Correct ▲ School ■ District

Performance on Total Test

School Proficiency
Total Students: 65
Students Above Proficiency (Pass): 28
Students Below Proficiency (Fail): 36
Mean Scale Score: 297.4

District Proficiency
Total Students: 244
Students Above Proficiency (Pass): 83
Students Below Proficiency (Fail): 161
Mean Scale Score: 286.5

PASS FAIL PASS FAIL

Mathematics Reliability = .91
** Reliability based on State Level Data

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Introduction

All students must have the opportunities and resources to develop the language skills they need to pursue life's goals and to participate fully as informed, productive members of society.

– National English/Language Arts Standards
http://www.ncte.org/about/over/standards/110846.htm

The goals of English language arts education in Nevada emphasize the importance of students becoming proficient readers and writers. As students learn literacy skills, they must understand and practice effective reading strategies for a variety of purposes in a range of genres. Students must read often, interpreting and evaluating a broad range of classic and contemporary literature. They should also be active, critical consumers of media and technology information. Students should know how to evaluate information, summarize it, and communicate their conclusions clearly to others. They must be able to develop, organize, and conventionally present their ideas logically and effectively in written and oral formats.

The Nevada English Language Arts Standards provide a comprehensive conceptual framework within which explicit content is identified in a K-12 sequence of study. The Nevada Proficiency Examination Program in Reading is designed to align the assessment system with instruction.

Nevada's Content and Performance Standards in English Language Arts are composed of eleven standards, four of which are tested in the Reading portion of the High School Proficiency Examination. Content standards 1 through 4 deal with students' abilities to use word analysis, reading process, and comprehension skills. Each standard has performance indicators that target specific competencies within the standard. The following is a description of the standard and those performance indicators tested at the state level (check marked) as well as at the local level.

Content Standard 1.0 – Students know and use word analysis skills and strategies to comprehend new words encountered in text.

- ✔ *Apply knowledge of word origins, root structures, and context clues, as well as use dictionaries and glossaries to comprehend new words in text.*
- ✔ *Apply knowledge of Anglo-Saxon, Greek-, and Latin-derived roots and affixes to determine the meaning of unknown vocabulary across the curriculum.*
- ✔ *Discern subtle differences between closely related words (e.g., thin and slender); use references as necessary.*
- ✔ *Analyze idioms, analogies, metaphors, and similes to infer literal and figurative meaning.*
- • *Apply knowledge of syntax and literary allusion to acquire an understanding of new words and to comprehend text.*

Content Standard 2.0 – Students use reading process skills and strategies to build comprehension.

- • *Refine pre-reading strategies such as accessing prior knowledge, predicting, previewing, and setting a purpose to ensure comprehension.*
- • *Use specific repair strategies such as summarizing, clarifying ambiguities, and consulting other sources.*

- *Plan, monitor, and assess the strategies used to ensure comprehension of a variety of texts.*

✔ *Apply and analyze a variety of skills and strategies such as locating essential information, verifying predictions, drawing conclusions, and making inferences to aid comprehension.*

Content Standard 3.0 – Students read to comprehend, interpret, and evaluate literature from a variety of authors, cultures, and times.

✔ *Analyze character, plots, setting, themes, and points of view in any given piece of literature.*

✔ *Make inferences supported by text regarding characters, plots, setting, and themes.*

- *Analyze viewpoints and messages in relation to the historical and cultural context of recognized works of British, American, or world literature.*

✔ *Use textual evidence to analyze the theme or meaning of a selection.*

✔ *Analyze and evaluate ways authors use imagery, figures of speech, and sound to elicit reader response.*

✔ *Analyze how irony, tone, mood, style, syntax, and sound of language are used for rhetorical and aesthetic purposes.*

- *Analyze the effects of an author's choice of literary form.*

Content Standard 4.0 – Students read to comprehend, interpret, and evaluate informational texts for specific purposes.

✔ *Analyze text features and rhetorical strategies of different types of primary source documents (e.g., policy statements, speeches, debates, diaries, platforms) and identify how authors use the features and strategies to achieve their purposes.*

✔ *Locate, organize, interpret, and synthesize information from multiple primary and secondary sources to support ideas and positions.*

- *Critique the power, logic, reasonableness, and audience appeal of arguments advanced in texts.*
- *Summarize authors' ideas and information in texts, including advertisements and public documents.*
- *Analyze how historical and cultural contexts influence the content and validity of informational texts.*
- *Read and apply multi-step directions in order to perform complex procedures and tasks.*

The Nevada Proficiency Examination in Reading

The Nevada Proficiency Examination in Reading is passage-based, that is, all items (questions) are connected to an extended piece of written text. Because reading passages form the basis for assessing reading comprehension, there are certain considerations that guide the selection of the texts including genre, passage length, and readability.

In assessing reading, it is important to provide opportunities for students to respond to different types of reading materials for different purposes. Reading passages found in the high school reading examination may be literary, informational, or functional text. Passage length will range from 1000 to 1200 words. Poems may be shorter than the minimum number of words designated, and pairing of two short passages may occur. The pairing of passages provides opportunities to assess analysis skills and yield the "richness" required to achieve the desired number of items per passage.

Besides being familiar with a range of reading genres, the readability levels of the passages must be consistent with grade-level appropriateness as well as with the reading purpose. Readability levels are

determined through many variables: format, typography, content, literacy form and style, vocabulary difficulty, sentence complexity, concept load or density, cohesiveness, etc. Readability formulas are run on each passage; however, teacher expertise is the final determinate of grade-level appropriateness.

The following is a description of each type of passage found in the Reading portion of the HSPE.

Literary Text – is writing that is read for enjoyment, entertainment or inspiration. The text may include short stories, literary essays, poems, historical fiction, fables, folk tales, plays, or excerpts from novels. If excerpts are selected, they must have a discernable beginning, middle, and end. The passages should reflect a variety of themes appropriate for and interesting to students at the designated grade level.

Informational Text – is writing that is read for a purpose and is similar to what students see in textbooks every day. It is read in order to solve problems, raise questions, provide information, or present new ideas. Informational passages may be drawn from magazines, newspaper articles, diaries, editorials, essays, biographies, and autobiographies. These selections should have readily identifiable key concepts and relevant supporting details. Informational passages should include a variety of grade-appropriate information sources, both primary and secondary.

Functional Text – is writing that is encountered in everyday life both inside and outside of the classroom. It includes consumer materials, how-to instructions, advertisements, and tables and graphic presentations of text.

The types of multiple-choice items that are used to evaluate responses to these passages fall into three Ability Levels (Cognitive Domains):

Forming an Initial Understanding (A1)

Questions at this level assess the student's knowledge of the initial understanding of what is read. For A1 questions, the answers can be found directly in the test or as a simple statement of information found in the text. Some examples are:

- Which word has the same vowel sound as…?
- What event happened for the first time in…?
- Choose the correct list of materials needed to play…
- Which sentence is a fact?

Developing an Interpretation (A2)

Questions at this level assess the ability to extend initial understanding to develop a more complete understanding of what is read. This process may involve linking information across parts of a text as well as focusing on specific information. Questions that assess this aspect of reading include drawing inferences about the relationship of two pieces of information and providing evidence to determine the reason for an action. Some examples are:

- How did…feel about the story?
- What is an opinion?
- The directions say to…, so
- What is a simile?

Determining a Critical Stance (A3)

Questions at this level require students to stand apart from the text, consider the entire text objectively, and evaluate its quality and appropriateness. Examining text content and structure requires critically evaluating, comparing/contrasting, and understanding the effect of such features as irony, humor, and organization. Some examples are:

- Another good title for this story is…
- The author of this passage would probably agree with
- What is the main idea of this passage?
- Which was the main event of this passage?

The matrix that follows is designed to explain the configuration of the Reading examination.

HSPE Reading Examination Item Matrix

Content Clusters/ Ability Levels (Cognitive Domains)	C1 Word Analysis and Skills (Standard 1)	C2 Comprehend Literature (Standards 2 & 3)*	C3 Comprehend Informational Text (Standards 2 & 4)*	Total Items	Percent
A1 Initial Understanding	4	3	9	16	30%
A2 Interpretation	9	8	8	25	46%
A3 Critical Stance	0	6	7	13	24%
Total Items	13	17	24	54	
Percent	24%	32%	44%		100%

* Please note: Standard 2 (Reading process strategies) is assessed in Reporting Cluster 2 with Standard 3 (Comprehend… literature) and in Reporting Cluster C3 with Standard 4 (Comprehend…informational text), but no separate score is given for Standard 2.

Reporting Category: C1 – Use Word Analysis Skills and Strategies

Ability Level: A1 – Forming an Initial Understanding

Performance Indicator: Discern subtle differences between closely related words (e.g., thin and slender); use references as necessary.

Passage: *How to Survive Junior High* (See page 28 in this guide to read the passage.)

Test Item:

What is the difference in the meaning of the word refuse and the word declined?

A Refuse means to express unwillingness to do something in a firm manner, but declined means the unwillingness was expressed in a courteous manner.

B Refuse means to hesitate before expressing unwillingness to do something, but declined means the unwillingness was stated quickly.

C Refuse means to ask permission to not do something, but declined means permission was not asked before something was done.

D Refuse means to question the reason for not doing something, but declined means the reason for not doing something was clearly stated.

Correct Response A: Both refuse and decline mean to be unwilling to accept, consider, or do something, but there is a subtle difference in the meaning of the two words. By using the word refuse in the following sentence, "Refuse to let other people talk you into doing their dirty work…," the author implies a person should express unwillingness in a manner that is forceful and unyielding. By using the word declined in the following sentence, "While I declined to assist with the prank…," the author implies that the unwillingness was expressed in a manner that would not offend the person who requested assistance.

Response B: This response is incorrect. This response attributes the wrong meaning to each word. Hesitation would more likely be associated with the word decline and a quick statement would more likely be associated with the word refuse. Selecting this response suggests an understanding of the common meaning of the two words but not the subtle differences.

Response C: This response is incorrect. This response erroneously suggests a relationship between unwillingness and permission. Selecting this response suggests a lack of understanding of the common meaning of the two words.

Response D: This response is incorrect. This response erroneously suggests a relationship between the statement of unwillingness and the reason for the unwillingness. Selecting this response suggests a lack of understanding of the common meaning of the two words.

Reporting Category: C1 – Use Word Analysis Skills and Strategies

Ability Level: A2 – Developing an Interpretation

Performance Indicator: Apply knowledge of word origins, roots, structures, and context clues, as well as use dictionaries and glossaries, to comprehend new words in text.

Passage: *How to Survive Junior High* (See page 28 in this guide to read the passage.)

Test Item:

Which word can be substituted for inexplicable in paragraph 8 without changing the meaning of the sentence?

A unexpected

B unexplainable

C unaccepted

D unusable

Correct Response B: The words inexplicable and "unexplainable" are synonymous or very near in meaning. The student has to know the two prefixes "in-" and "un-" mean "not" and that "explainable" and "explicable" are similar in meaning.

Response A: This response is incorrect. Some students will select this option because both words contain the same prefix and the first five letters of inexplicable and "unexpected" are the same.

Response C: This response is incorrect. Some students will select this option because both inexplicable and "unaccepted" contain prefixes with synonymous or very nearly the same meaning and because the context around the tested word refers to a gift for which it is the custom to express appreciation.

Response D: This response is incorrect. Some students will choose this option because both inexplicable and "unusable" contain prefixes with synonymous or very nearly the same meaning and because the context of a gift in the passage suggests the concept of the use of it.

Reporting Category: C2 – Read to Comprehend, Interpret, and Evaluate Literature

Ability Level: A1 – Forming an Initial Understanding

Performance Indicator: Apply and analyze a variety of skills and strategies such as locating essential information, verifying predictions, drawing conclusions, and making inferences to aid comprehension.

Passage: *How to Survive Junior High* (See page 28 in this guide to read the passage.)

Test Item:

The author states that the advice in this passage is for

A students in the fifth and sixth grades.

B students in the seventh and eighth grades.

C high school students.

D college students.

Correct Response A: The passage states "I want to aim my arrows of insight at students now facing a truly intimidating threshold: The fifth- and sixth-graders of America saying farewell to elementary school." This clearly indicates the group for whom the advice is intended.

Response B: This response is not correct. Some students will select this option because the title of the passage is "How to Survive Junior High" and students who do not read carefully may assume that seventh- and eighth-grade students (junior high school students) are the students for whom the advice is intended.

Response C: This response is not correct. Some students will choose this option because the passage mentions high school students, graduation, and commencement exercises. Students who do not read carefully may assume that this is the group for whom the advice is intended.

Response D: This response is not correct. Some students will choose this option because the passage mentions college students, graduation, and commencement exercises. Students who do not read carefully may assume that this is the group for whom the advice is intended.

Reporting Category: C2 – Read to Comprehend, Interpret, and Evaluate Literature

Ability Level: A2 – Developing an Interpretation

Performance Indicator: Use textual evidence to analyze the theme or meaning of a selection.

Passage: *Autobiography in Five Short Chapters* (See page 30 in this guide to read the passage.)

Test Item:

Which line from the poem **best** supports the idea that the narrator is deceiving herself?

A "I am lost. . . I am helpless."

B "I pretend I don't see it."

C "I still fall in. . .it's a habit. . .but,"

D "It is my fault."

Correct Response B: In Chapter II, the narrator says, "I pretend I don't see it." This statement indicates that she is deceiving herself – she knows the hole is there but she walks into it anyway. Then she seems surprised to find herself there – "I can't believe I am in this same place." Finally, she refuses to take responsibility for having fallen in the hole.

Response A: This response is incorrect. Students may select this response because they do not realize that being lost and helpless are the reasons the narrator gives for falling in the hole; they may erroneously believe that it is deception.

Response C: This response is incorrect. Students may select this response because they do not see the narrator's recognition that falling in the hole is not a habit, but rather, it is her first attempt to take responsibility for her actions.

Response D: This response is incorrect. Students who select this response may not recognize that the narrator's admission of guilt is the acceptance of responsibility for her actions.

Reporting Category: C2 – Read to Comprehend, Interpret, and Evaluate Literature

Ability Level: A3 – Demonstrating a Critical Stance

Performance Indicator: Analyze character, plots, setting, themes, and points of view in any given piece of literature.

Passage: *Autobiography in Five Short Chapters* (See page 30 in this guide to read the passage.)

Test Item:

This selection would most likely be included in a collection of poetry about

A urban decay.

B childish behavior.

C achieving recognition.

D taking personal responsibility.

Correct Response D: This is the correct answer because the narrator must learn to accept responsibility for her own mistakes to make a change in her life. The street represents her life and the hole her mistakes. Her final avoidance of the hole represents her taking personal responsibility for what happens to her.

Response A: This response is incorrect. Some students would select this response because the narrator repeatedly falls into a hole in the street, and holes in streets represent one aspect of urban decay. Selecting this response indicates a failure to understand the metaphorical use of the hole and the street.

Response B: This response is incorrect. Some students would select this option because children are the people who most frequently trip and fall down. Selecting this response indicates a failure to understand the metaphorical use of the hole and the street.

Response C: This response is incorrect. Some students would select this option because when people successfully solve an on-going problem they often receive recognition for their efforts. Selecting this response indicates a partial understanding of the metaphorical use of the hole and the street.

Reporting Category: C3 – Read to Comprehend, Interpret, and Evaluate Informational Texts

Ability Level: A1 – Forming an Initial Understanding

Performance Indicator: Apply and analyze a variety of skills and strategies such as locating essential information, verifying predictions, drawing conclusions, and making inferences to aid comprehension.

Passage: *Volunteer Application and Service Agreement (Nevada Division of Wildlife)* (See pages 32-33 in this guide to read the passage.)

Test Item:

Information on the first page of the application indicates that the Nevada Division of Wildlife must do which of the following?

A consider only applicants who have wildlife management skills or previous experience

B provide equal opportunities to applicants to comply with Federal Aid requirements

C agree to share applicants' personal information with the public

D reject applicants who have volunteered previously

Correct Response B: The application states that the Nevada Division of Wildlife undergoes audits to ensure compliance with Federal Aid regulations and that is why they are asking applicants to voluntarily provide information about age and physical limitations on the application form.

Response A: This response is incorrect. Some students would select this option because the state agency seeking the volunteers is called the Nevada Division of Wildlife and many of the special skills listed on the form include the term "wildlife."

Response C: This response is incorrect. Some students would select this option because they are aware that state agencies serve the public and the application form is distributed to the public for anyone to fill out.

Response D: This response is incorrect. Some students would select this option because the application form specifically asks if the person has volunteered previously, and in most instances students must wait their turn to again take part in an activity.

Reporting Category: C3 – Read to Comprehend, Interpret, and Evaluate Informational Texts

Ability Level: A2 – Developing an Interpretation

Performance Indicator: Summarize authors' ideas and information in texts, including advertisements and public documents.

Passage: *Hoover Dam (Boulder Dam)* (See pages 35-36 in this guide to read the passage.)

Test Item:

In this passage, the author's **main** focus is to

A provide details about the construction of Hoover Dam.

B analyze the environmental effects of Hoover Dam.

C describe the beauty of the area around Hoover Dam and Lake Mead.

D present evidence of the need to construct dams similar to Hoover Dam.

Correct Response A: Even though details about the beauty, benefits, and environmental effects of the dam are mentioned, all paragraphs in the passage relate details about the construction process of Hoover Dam. Therefore, the main focus is on how the dam was constructed.

Response B: This response is incorrect. Some students would select this option because the first paragraph of the passage is about the environmental impact the construction of Hoover Dam had on the area. However, that is not the author's main focus.

Response C: This response is incorrect. Some students would select this option because the passage describes the elegant industrial design of the dam, its arches, and the 10 bas-reliefs executed by a sculptor. It also describes the beautiful canyon that was flooded by Lake Mead, and the *Winged Figures of the Republic* installed in a plaza on the Nevada side of the river. However, that is not the author's main focus.

Response D: This response is incorrect. Some students would select this option because the passage describes the way the dam was constructed to work so well and describes the multiple needs it fills for the residents of the area. Some students will infer that other sites should have a similar structure with the benefits it brings. However, that is not the author's main focus.

Reporting Category: C3 – Read to Comprehend, Interpret, and Evaluate Informational Texts

Ability Level: A3 – Demonstrating a Critical Stance

Performance Indicator: Apply and analyze a variety of skills and strategies such as locating essential information, verifying predictions, drawing conclusions, and making inferences to aid comprehension.

Passage: *Volunteer Application and Service Agreement (Nevada Division of Wildlife)* (See pages 32-33 in this guide to read the passage.)

Test Item:

Which statement would a successful applicant most likely have written in the box labeled "Comments?"

A All my friends and family enjoy fishing.

B Last summer I worked with my dad building houses.

C My brother worked as a volunteer last summer.

D I have always thought bird watching would be fascinating.

Correct Response B: One of the special skills listed as a need is carpentry. The correct response is an explanation of the context in which those skills were gained. It can be assumed that applicants with a listed skill will be accepted if there is no other information that would prevent the person from being accepted.

Response A: This response is incorrect. Some students would select this option because there are many listed areas of expertise that contain the words "fishing" and "fisheries." However, just because a person's friends and family enjoy fishing does not indicate that this person does, nor does it indicate that the person has any skill in the areas of fishing and fisheries.

Response C: This response is incorrect. Some students would select this option because the entire form is an application of volunteer work and they would think that word would be important to include in a comment. Some students will assume that the brother volunteered for the Nevada Division of Wildlife, but that is not what the sentence says. However, just because a brother has been a volunteer (anywhere) does not mean that he was a good volunteer or that this person will be a good volunteer.

Response D: This response is incorrect. Some students would select this option because birds are a type of wildlife and bird identification is one of the areas of expertise included on the list. However, thinking bird watching would be fascinating does not suggest any expertise in it.

How to survive junior high

By Jeffrey Shaffer

PORTLAND, ORE. – This is the time of year when our country experiences a sudden, massive surplus of sage advice. Schools are hosting commencement exercises, and most of the ceremonies feature a distinguished speaker offering words of alleged wisdom to enlighten and inspire the graduates.

I know the occasion is an important milestone for high school and college kids, but I think most of them are mature enough to chart their own maps, without any extra platitudes from me. I want to aim my arrows of insight at students now facing a truly intimidating threshold: The fifth- and sixth-graders of America saying farewell to elementary school.

Good-bye, cozy little campus, leisurely lunchroom, and lining up for recess. Hello, gym class, jammed lockers, and mobs of unfamiliar faces. Advancing to middle school and junior high is tricky, and no one has ever come up with guidelines to guarantee a smooth transition. But I've got a few useful hints for the journey through the halls of academe – and beyond.

• Make friends with the teachers, counselors, and office staff. They can be very helpful. In school, and in life, it's always good to have the people running the system on your side.

• Stay away from kids who invite you to hang out with them in the bathroom. Milling around in a lavatory is not the kind of lesson plan that produces great ideas or stimulates intelligent discussions.

• Refuse to let other people talk you into doing their dirty work, like pulling the chair out from under a classmate. They may say, "It'll be really funny." No way, dude. This happened to me. While I declined to assist with the prank, I should've gone one step further and stopped it completely. I'll never forget the look on the victim's face as she hit the floor. Fortunately, she wasn't hurt.

• Do your best not to fall into the habit of criticizing every detail of your surroundings. School, and the real world, is not utopia, but constantly complaining won't help. It just makes you tiresome.

• Don't try to figure out the mystery of what makes some people popular. Popularity is an inexplicable gift, like a MacArthur Foundation grant. It either comes to you or it doesn't and there's no way to predict who's getting it next.

• If you ever want a break from the pressure and anxiety of growing up, find a quiet playground and head for the swings. One of the hard truths about the end of childhood is that we can never go back to the simpler days of elementary school. But I know from personal experience that riding a swing on a summer evening can carry you a long way in that direction.

"How to survive junior high" by Jeffrey Shaffer. Copyright © 2002 The Christian Science Monitor. Reprinted by permission of the publisher.

1 The overall tone of this passage is

A conversational and sincere.

B scholarly and humorous.

C sad and mysterious.

D nostalgic and old-fashioned.

2 In which other context would the author's advice be **most** applicable?

A a new job

B a sports event

C a family gathering

D a shopping trip

3 In paragraph six, the **main** reason the author uses the word "dude" is to

A prove he is one of the crowd.

B increase his popularity.

C flaunt his distinguished status.

D show he understands teenagers.

4 In paragraph six, the author uses an incident from his own life to emphasize the conflict of

A popularity versus good grades.

B carelessness versus good deeds.

C peer pressure versus responsible action.

D unfair competition versus good sportsmanship.

5 The second sentence in the last paragraph is **best** described as

A metaphorical.

B philosophical.

C critical.

D fatalistic.

Autobiography in 5 Short Chapters

by Portia Nelson

Chapter I

I walk down the street.
There is a deep hole in the sidewalk.
I fall in.
I am lost . . . I am helpless.
It isn't my fault.
It takes forever to find a way out.

Chapter II

I walk down the same street.
There is a deep hole in the sidewalk.
I *pretend* I don't see it.
I fall in again.
I can't believe I am in this same place.
But it isn't my fault.
It still takes a long time to get out.

Chapter III

I walk down the same street.
There is a deep hole in the sidewalk.
I see it is there.
I still fall in . . . it's a habit . . . but,
my eyes are open.
I know where I am.
It is my fault.
I get out immediately.

Chapter IV

I walk down the same street.
There is a deep hole in the sidewalk.
I walk around it.

Chapter V

I walk down another street.

Copyright © 1993 by Portia Nelson, from the book *There's A Hole in My Sidewalk*, Beyond Words Publishing, Inc., Hillsboro, Oregon, U.S.A.

6 The title of the poem indicates that the incidents described in the poem happened to

A the poet's friend.

B the poet herself.

C a famous person.

D a small child.

7 The tone of the first two chapters can **best** be described as

A instructive.

B critical.

C depressing.

D hopeful.

8 The street in the poem is most likely a metaphor for

A a temporary detour.

B life's journey.

C a winding path.

D life's problems.

9 Based on the progression of the poem, in Chapter VI the narrator will probably

A forget the hole ever existed.

B continue to avoid the hole.

C find another street with an identical hole.

D fall in the same hole again and remain there.

10 In Chapter III, the narrator's reason for falling into the hole is that she

A is hopelessly clumsy.

B has vision problems.

C has developed a bad habit.

D is looking behind her.

Volunteer Application and Service Agreement

Nevada Division of Wildlife
1100 Valley Road
Reno, NV 89512

Notice to applicants: Federal and sate law requires that all applicants by considered without regard to race, sex, age, national origin or handicap. We believe in and fully support equal opportunity, however, we ask you to voluntarily provide information requested in these areas to enable us to address these items when we undergo Federal Aid compliance audits. Your application will be given every consideration whether or not this information is provided. This information is confidential.

Name (Last, First, M.I.) _____ **Social Security Number** _____ **Date of Birth** _____

Mailing Address:

Street/P.O. Box _____

City _____ **State** _____ **Zip** _____

Phone

Home: _____ **Work:** _____ Email _____

Have you volunteered for the Nevada Division of Wildlife previously? Yes No

Please specify any physical limitation that may influence your volunteer work:

Listed below are possible volunteer acitivities. Check those that interest you:

CONSERVATION EDUCATION	GAME	FISHERIES	HABITAT
☐ Hunter Education Instructor	☐ Check Stations	☐ Build Fishing Access	☐ Improve Habitat
☐ Angler Education Instructor	☐ Equipment Maintenance	☐ Creel Census	☐ Enhance Streams
☐ Interpretation / Guide Tours	☐ Provide tools or equipment	☐ Hatchery Worker	☐ Other
☐ Teach Project WILD	☐ Data Entry	☐ Other	
☐ Volunteer Coordination	☐ Wildlife Survey		
☐ Data entry and collection			

Do you have special skills or expertise you would like to share? (Please check all that apply)

☐ First Aid Certificate	☐ Supervision	☐ Audio / Visual Equipment Use
☐ Fisheries Degree / Background	☐ Teaching	☐ Bird Identification / Ornithology
☐ Forestry	☐ Video Production	☐ Boat Operation
☐ Graphic Design / Artwork	☐ Botany / Plant Identification	☐ Hand / Power Tools
☐ Wildlife Degree / Background	☐ Carpentry	☐ Heavy Equipment Operation
☐ Working with people	☐ Clerical / Office Machines	☐ Horses / Mules / Riding / Packing
☐ Writing / Editing	☐ Computer Applications	☐ Photography
☐ Other Trade Skills	☐ Public Speaking / Presentations	☐ Other
☐ Drivers License	☐ Fisheries experience (list)	
☐ Game experience (list)		

_____ _____

Volunteer Application and Service Agreement

Nevada Division of Wildlife
1100 Valley Road
Reno, NV 89512

Comments

Agreement by Volunteer:

I offer and agree to volunteer my services without compensation to assist the Nevada Division of Wildlife (NDOW) in accordance with the following understanding:

- Although this volunteer service will not confer on me the status of a State employee while acting within the scope of this agreement, I will be deemed to be as if I were a State employee for the purposes of the:

  Nevada Revised Statutes Chapter 41, which protects a State Employee from liability for injury or damage to others while the employee is acting within the scope of his or her duties; and

  Nevada Revised Statutes Chapter 16, which authorizes compensation for work-related injury.

- I am at least 18 years old (or if I am younger than 18 years of age, my parent or guardian consents to this Agreement by signing below).
- I understand that Volunteer projects will frequently be out of doors and that I will need to be in a physical condition adequate for normal outdoor physical activities. I will notify the Volunteer Coordinator of any significant change in my ability to do outdoor work. If special skills are required for a project, I will be trained therein before being assigned to that project.
- If I or my minor son/daughter drive in my personal vehicle to and from a volunteer project, I certify that the vehicle is properly insured by Nevada State Law.
- I understand that this application may be subjected to a background investigation through state and local law enforcement agencies.
- This agreement does not entitle me to operate a state vehicle unless specifically authorized.

Signature of Volunteer _____ Date_____

Signature of parent or guardian (if volunteer is under 19)_____ Date_____

Name (print)_____ **Relationship to volunteer** _____

Person to notify in case of an emergency:_____

Relationship to volunteer:_____

Address
Street _____ **City** _____ **State** _____ **Zip** _____
Telephone (___) _____

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11 Which information does the application document **not** provide?

A the last date the application can be submitted

B where the office of the Nevada Division of Wildlife is located

C the types of volunteer activities that may be available

D under what circumstances a parent or guardian signature is needed

12 The information on the form indicates that all applicants that are accepted for volunteer work must be willing to

A submit multiple copies of the form.

B obtain first aid certification and a driver's license.

C provide a doctor's certification of physical condition.

D abide by the terms stated on the form.

13 The suffix "–ology" helps you know that the word Ornithology means

A fear of birds.

B place for birds.

C study of birds.

D relating to birds.

14 Laws in the state of Nevada allow volunteers to be compensated for

A uniforms needed for the job.

B gas to travel to and from the job.

C equipment needed to complete a job.

D injuries incurred on the job.

15 On the second page of the application form, the word deemed means

A confessed.

B warned.

C considered.

D forced.

16 Based on information in the application form, which person's occupation would be **most** useful to them as a volunteer for the Nevada Division of Wildlife?

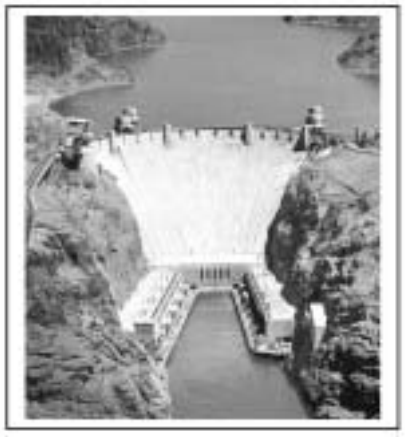
A dentist

B teacher

C pilot

D lifeguard

Hoover Dam (Boulder Dam)



By Julie Nicoletta

1931-1935, Gordon B. Kaufmann, U.S. Bureau of Reclamation.

Approximately 7 miles east of Boulder City on U.S. 93

The first dam to hold back the waters of the mighty Colorado River, Hoover Dam can be regarded as a symbol either of human ingenuity or of human arrogance. Its construction drastically changed southern Nevada's landscape by filling in a dramatically beautiful canyon and creating Lake Mead, a 15-mile-long lake that flooded prehistoric and historic settlements. Built as Boulder Dam, it was renamed in 1947 for President Herbert Hoover.

The enormous resources marshaled to construct what was at the time the largest dam in the world signified the nation's determination to accomplish monumental engineering feats during the Great Depression. At the peak of construction, over 5,000 people worked on the project. The dam stands 726.4 feet high, and its crest length is 1,244 feet. The top width measures 45 feet; the bottom width 660 feet. The power plant at the base of the dam has two wings both roughly parallel with the river. Each is 650 feet long by 55 feet wide by 75 feet high. The Bureau of Reclamation uses the dam to control flooding and sediment deposits, to provide electric power, and to supply water for agricultural, domestic, and industrial use.

Even before the dam comes into view, the multitude of towers and power lines streaming across the landscape lead the way to it. As architecture, the concrete arch-gravity dam elegantly combines industrial design and a spare modern style. Engineers chose this type of dam because the arch, with its convex side toward the lake, puts the concrete in compression, enabling the dam to carry the water load by both gravity action and horizontal arch action. A total of 6.6 million tons of concrete were used to build the dam. The concrete, made of a combination of coarse and fine aggregate for greater strength, was poured in blocks, then cooled by ice water run through pipes in the cement. Without this system the concrete would have taken more than a century to set. In addition to the practical uses of reinforced concrete, the material, used extensively beginning in the early twentieth century, was strongly associated with modernity and incorporated in a variety of buildings – industrial, commercial, and residential.

At the top of the dam, on the lakeside, rise the tops of four intake towers. By using the force of gravity, these channel water downward to penstocks — steel tubes 30 feet in diameter through which the water flows to set the turbines in motion. Sleek and metal-clad, the circular turbines punctuate long, austere chambers that flank the walls of the canyon near the base of the dam; rectangular windows mark these chambers on the exterior. Once released from the turbines, the water flows downstream, leaving the power plant complex through the Stoney Gate. Additional water enters the river from the Arizona Spillway tunnel that connects Lake Mead and the riverbed beyond the Stoney Gate.

Four square towers interspersed with small observation niches project above the top of the dam. Together these elements cast shadows along the crest of the dam, emphasizing the texture of the concrete. The outer towers house utilities and public restrooms. The two inner towers — one in Nevada, one in Arizona — contain elevators that carry workers and visitors into the dam. As the public entrances to the dam, these towers display the only decorative treatment on the structure's exterior. Each has five concrete bas-reliefs executed by the sculptor Oskar J. W. Hansen; Nevada's tower depicts the benefits of Hoover Dam—flood control, navigation, irrigation, water storage, and power. Hansen also designed *Winged*

Figures of the Republic, two 30-foot-tall bronze winged figures on a polished black diorite base, installed in a plaza of Hansen's design on the Nevada side of the river to commemorate the dam's construction. The U-shaped power plant, on the down-stream side of the dam, nestled near the bottom of the canyon, has thick concrete walls, unadorned except for pilaster strips facing the water and flanking rows of windows. Four intake towers — two on the Nevada side, two on the Arizona side — rise on the upstream side of the dam. The towers, with their smooth piers and roofs topped by light globes, continue the dam's formal style.

Reprinted with permission from *Buildings of Nevada*, by Julie Nicoletta. New York: Oxford University Press, © 2000 by the Society of Architectural Historians. Image © by Lester Lefkowitz/CORBIS.

HSPE READING SAMPLE TEST QUESTIONS

17 In paragraph two, what does the word marshaled mean?

A reviewed

B assembled

C cancelled

D exposed

18 In paragraph six, which meaning of the word executed is used?

A created from a specific design

B put a decision into effect

C performed a procedure

D made legal by signing

19 The author states that Hoover Dam can be regarded as a symbol of human arrogance because it was

A constructed with little regard for what it would cost.

B later renamed for a United States President.

C recognized as the world's largest dam at that time.

D built with little concern for the landscape it would alter.

20 Pipes were filled with cool water to help set the concrete because

A the water helped keep the concrete from cracking.

B the process allowed drying from the inside out.

C the procedure helped speed the process.

D the sturdy pipes reinforced the concrete.

21 In paragraph 2, why does the author of the article refer to the construction of Hoover Dam as a "monumental engineering feat"?

A The dam was built as a monument to the science of engineering.

B It was a task that engineers attempted during the Great Depression.

C It required five thousand engineers to plan and manage the project.

D The construction of the massive dam was a huge undertaking.

22 Which of these was probably **not** one of the reasons Hoover Dam was built?

A to provide jobs for construction workers and engineers

B to determine if a structure of that size could successfully stand

C to harness the flow of the raging Colorado River

D to provide a reliable water supply for Nevada cities and businesses

23 Hoover Dam is managed by

A President Herbert Hoover.

B Oskar J.W. Hansen.

C the Boulder City Council.

D the U.S. Bureau of Reclamation.

24 This article would most likely be found in

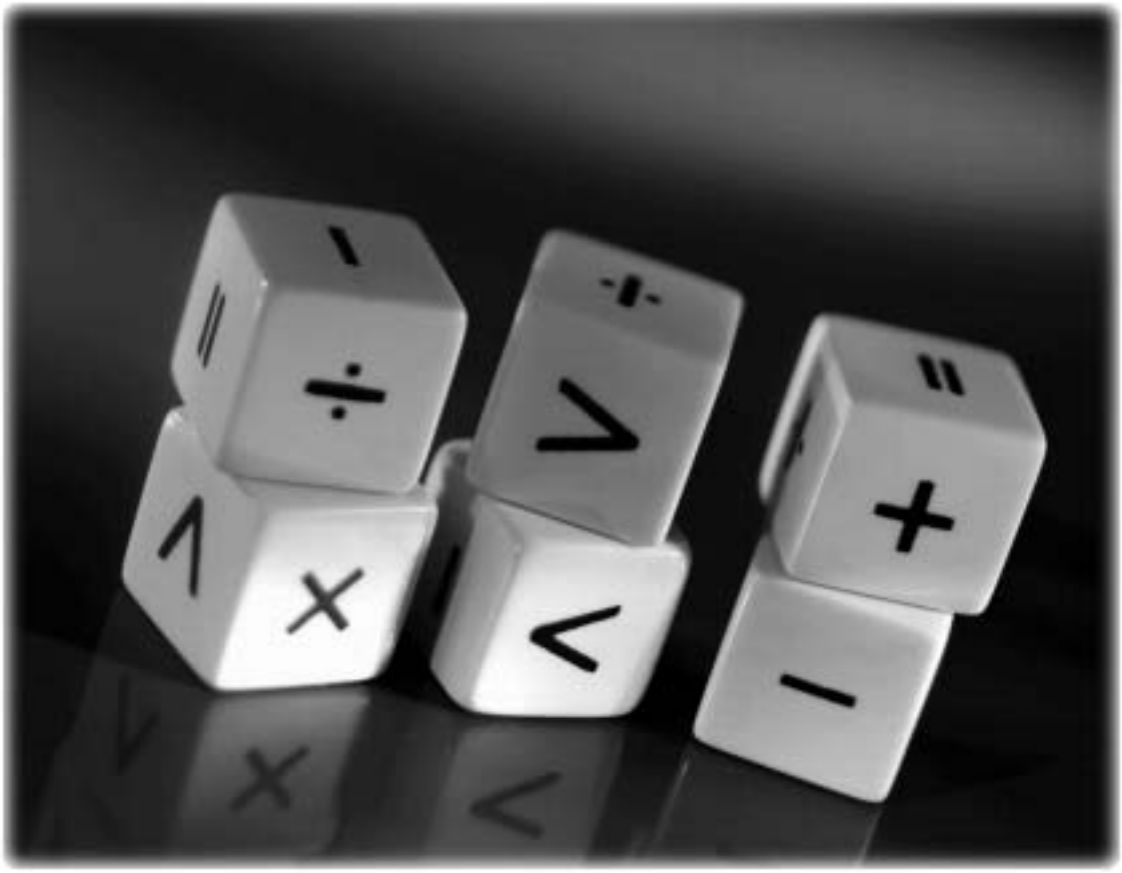
A a newspaper for an art club.

B an internet site for electricians.

C a magazine on architecture.

D an autobiography of Herbert Hoover.

Item Number	Reporting Category	Ability Level	Answer Key
1	C2	A3	A
2	C2	A3	A
3	C2	A2	D
4	C2	A2	C
5	C2	A3	B
6	C2	A1	B
7	C2	A3	C
8	C1	A2	B
9	C2	A3	B
10	C2	A1	C
11	C3	A1	A
12	C3	A2	D
13	C1	A1	C
14	C3	A2	D
15	C1	A2	C
16	C2	A3	B
17	C1	A2	B
18	C1	A1	A
19	C3	A3	D
20	C3	A2	C
21	C3	A2	B
22	C3	A1	D
23	C3	A1	D
24	C3	A3	C



Introduction

Students have different abilities, needs, and interests. Yet everyone needs to be able to use mathematics in his or her personal life, in the workplace, and in further study. All students deserve an opportunity to understand the power and beauty of mathematics. Students need to learn a new set of mathematics basics that enable them to compute fluently and to solve problems creatively and resourcefully.

– National Council of Teachers of Mathematics
http://www.nctm.org/standards/overview.htm

Comprehensive mathematical knowledge is essential for success in today's world. Society needs individuals who have sound estimation skills and number and spatial sense, who are competent using and interpreting data, and who can use appropriate technology resources to solve problems and make informed decisions. These skills are essential if students are to become successful citizens, life-long learners, and competitive workers in a global market place.

The goals of mathematics education in Nevada include the following:

- All students will have knowledge of basic mathematical facts and relationships and the ability to perform computations;
- All students will have the ability to make sound estimations and to make sense of number relationships;
- All students will have the ability to read, interpret, and create graphs, tables, and charts;
- All students will have the ability to make geometric observations, measurements, and constructions; and
- All students will have the ability to understand the effective, appropriate, and efficient use of models and mathematical tools, including calculators and computer technology.

The *Nevada Mathematics Standards* provide the framework for a comprehensive K-12 mathematics program and are intended to guide curriculum, instruction, and assessment as well as other policies and practices that affect student learning. The standards serve as a foundation for teachers and curriculum specialists as they create curriculum and adopt teaching practices relevant to the needs, strengths, and diversity of Nevada's students and communities. The standards also provide clear direction for meaningful pre-service and in-service professional development. In essence, the standards help Nevada's school districts build cohesive and comprehensive systems for ensuring that all students achieve at high levels.

Below are the five content strands (Standards 1.0-5.0) and four process strands (Standards 6.0-9.0) for the Nevada Standards in Mathematics. The process strands are carefully integrated within the content standards to emphasize their interconnectedness. This integration is meant to emphasize the importance of teaching mathematics within the context of an application so students will not only know important skills and content but also how to use their knowledge and skills to reason and solve problems. Listed below the five content strands are the performance indicators assessed in the Nevada Proficiency Examination in Mathematics. The performance indicators for the process strands are also assessed; however, they are not reported separately.

Content Standard 1.0: Numbers, Number Sense, and Computation

Students will develop their ability to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. Students will accurately calculate and use estimation techniques, number relationships, operation rules, and algorithms. They will determine the reasonableness of answers and the accuracy of solutions.

- ✔ **Calculate** and estimate sums, differences, products, quotients, **powers,** and **roots** using mental math, **formulas,** and **algorithms.**
- ✔ Read, write, add, subtract, multiply, and divide **real numbers** in various forms including **radicals,** exponential, and **scientific notation.**
- ✔ Compute with **rational** and **irrational numbers** to solve a variety of problems including rates, recipes, unit costs, and percents (e.g., discounts, interest, sale, prices, commissions, and taxes).
- ✔ Apply the laws of **exponents** to perform **operations** on expressions with **integral exponents** and expressions in scientific notation.
- ✔ Apply the properties and theories of the real number system to everyday situations.
- • Perform simple operations on **matrices.**
- ✔ Compare and order rational numbers.
- ✔ Estimate in problem-solving situations and in practical applications; determine the reasonableness of the answer and verify the results.
- ✔ Explain the relationship among fractions, decimals, and percents; translate among various representations of equal numbers (e.g., from fractions to decimals to percents, various forms of "1" such as $\frac{3}{3}$ or $\frac{16}{16}$) to solve problems efficiently.

Content Standard 2.0: Patterns, Functions, and Algebra

Students will develop their ability to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. Students will use various algebraic methods to analyze, illustrate, extend, and create numerous representations (words, numbers, tables, and graphs) of patterns, functions, and algebraic relations as modeled in practical situations.

- ✔ Use **inductive reasoning** to find the missing term in number and geometric patterns and to generalize basic patterns to the n^{th} term, with and without calculators; use written, oral, and **symbolic language** to identify and describe patterns, **sequences,** and **functions.**
- ✔ Translate among verbal descriptions, graphic, tabular, and algebraic representations of mathematical situations.
- ✔ Represent and solve problems using **discrete** structures including graphs and matrices, with and without technology.
- ✔ Identify, model, describe, and evaluate relationships, including functions, using a variety of methods with and without technology.
- ✔ Create and use different forms of a variety of equations, proportions, and/or formulas (e.g., I=PRT or R=I/PT), solving for the needed variable as necessary in given situations.
- ✔ Add and subtract **binomials;** describe the connection between the algebraic process and the arithmetic process.
- ✔ Add, subtract, multiply, and factor (1st and 2nd degree) **polynomials,** describing each step in the process and the connection between the algebraic process and the arithmetic process; use simple quadratic equations with integer roots to solve practical and mathematical problems.

- ✔ Describe how a change in one variable of a mathematical relationship affects the remaining variables using various tools and methods.
- ✔ Model practical problems from everyday situations with a variety of models that includes matrices, translating among tabular, symbolic and graphical representations of functions, with and without technology.
- ✔ Model, identify, and solve linear equations and inequalities; relate this process to the order of operations.
- ✔ Determine the **domain** and **range** of linear relations given a graph or a set of **ordered pairs;** explain their importance in problem solving situations.
- ✔ Solve simple linear equations and connect that process to the order of operations.
- • Solve systems of two linear equations, both algebraically and graphically; use graphing calculators as a primary tool in solving these problems and to verify solutions found by other methods.

Content Standard 3.0: Measurement

Students will develop their ability to solve problems, communicate, reason and make connections within and beyond the field of mathematics. Students will use appropriate tools and techniques of measurement to determine, estimate, record, and verify direct and indirect measurements.

- • Convert between customary and metric systems; convert among monetary systems.
- ✔ Demonstrate an understanding of precision, error, and **tolerance** in measurement using the appropriate measurement tool to the required degree of accuracy.
- ✔ Select and use measurement tools, techniques, and formulas to calculate and compare rates, cost, distances, interest, temperatures, and weight/mass.
- ✔ Select and apply appropriate formulas to solve problems; identify the relationship between changes in area and volume and changes in linear measures of figures.
- ✔ Distinguish and differentiate among the structures, language and uses of systems of measures (e.g., linear, square units, cubic units); justify and communicate the differences between accuracy, precision, error, and tolerance in measurement; describe how each of these can affect solutions found in problem situations.
- • Use and interpret consumer data (e.g., **amortization tables,** tax tables, and compound interest charts) to make informed financial decisions related to practical applications such as budget.
- ✔ Apply ratios and proportions to calculate rates and as a method of **indirect measure** (e.g., miles per hour, cost per unit).
- ✔ Use relationships (e.g., proportions) and formulas (indirect measurement) to determine the measurement of unknown dimensions, angles, areas, and volumes to solve problems.

Content Standard 4.0: Spatial Relationships and Geometry

Students will develop their ability to solve problems, communicate, and make connections within and beyond the field of mathematics. Students will identify, represent, verify, and apply spatial relationships and geometric properties.

- ✔ Identify and use the properties of polygons (including interior and exterior angles) and elements of circles (e.g., angles, arcs, **chords, secants** and **tangents**) to solve practical problems.

- ✔ Apply the properties of equality and proportionality to solve problems involving congruent or similar shapes.
- ✔ Use coordinate geometry and models to change scale (enlarge and reduce).
- ✔ Use coordinate geometry to represent and interpret relationships defined by equations and formulas (including distance, midpoint, and slope), with and without technology.
- ✔ Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and **perpendicular lines** and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.
- ✔ Form generalizations and **validate** conclusions about properties of geometric shapes including parallel lines, perpendicular lines, bisectors, triangles, and quadrilaterals.
- ✔ Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.
- ✔ Verify and explain the Pythagorean Theorem using various methods (e.g., using grid paper, applying it to a missing side of a **right triangle**); determine missing sides and angles of triangles based on properties of their sides and angles.
- ✔ Apply the Pythagorean Theorem, its **converse**, properties of special right triangles, and right triangle trigonometry to solve practical problems.
- • Use hand tools, technology, and models to construct figures and bisect angles and line segments; distinguish among constructions, sketches and drawings.
- • Use tools, technology, and models to sketch, draw, and construct geometric figures in order to solve problems and to demonstrate the properties of geometric figures.
- ✔ Construct, justify and defend mathematical conclusions using logical, sequential, **deductive reasoning** supported by established mathematical principles.

Content Standard 5.0: Data Analysis

Students will develop their ability to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. Students will collect, organize, display, interpret, and analyze data to determine statistical relationships and probability projections.

- ✔ Organize, display, read, and analyze data, with and without technology, using a variety of displays including box and whisker plots.
- • Use calculators and computers to create and manipulate tables, graphs, and matrices to communicate statistical information; use the shape of graphs of normal distributions to compare and analyze information.
- ✔ Find the **theoretical probability** of an event using different counting methods (e.g., **tree diagrams**, **sample spaces**, and organized lists) and compare those results with actual (**experimental**) results, differentiating between the probability of an event and the **odds** of an event.
- • Design, conduct, analyze, and communicate the results of multi-stage probability experiments.
- ✔ Find the number of combinations possible in given situations using a variety of counting methods.
- ✔ Distinguish between and apply **permutations** and combinations using a variety of methods, including The Fundamental Counting Principle.
- ✔ Select and use the measures of central tendency such as mean, median, mode and variability including range, distribution and possible outliers that are appropriate for given situations.

- ✔ Evaluate arguments that are based on data analysis for accuracy and validity; analyze the effect a change of scale or a change of format will have on statistical charts and graphs.
- ✔ Analyze the validity of statistical conclusions noting various sources of bias, misuse, and abuse of data caused by a wide variety of factors including choices of scale, probability versus odds, inappropriate uses of measures of central tendency, inaccurate curve fitting and inappropriate uses of controls or sample groups.
- ✔ Formulate reasonable inferences and projections based on **interpolations** and **extrapolations** of data to solve problems.
- • Design, construct, analyze, and select an appropriate type of graph to represent data to communicate the results of statistical experiments (e.g., write a survey question and analyze and communicate the findings).

Process Standard 6.0: Problem Solving

Students will develop their ability to solve problems by engaging in developmentally appropriate problem solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts in order to: formulate their own problems; find solutions to problems from everyday situations; develop and apply strategies to solve a wide variety of problems; and integrate mathematical reasoning, communication and connections.

Process Standard 7.0: Mathematical Communication

Students will develop their ability to communicate mathematically by solving problems in which there is a need to obtain information from the real world through reading, listening, and observing in order to: translate this information into a mathematical language and symbols; process this information mathematically; and present results in written, oral and visual formats.

Process Standard 8.0: Mathematical Reasoning

Students will develop their ability to reason mathematically by solving problems in which there is a need to investigate significant mathematical ideas and construct their own learning in all content areas in order to justify their thinking; reinforce and extend their logical reasoning abilities; reflect on and clarify their own thinking; and ask questions to extend their thinking.

Process Standard 9.0: Mathematical Connections

Students will develop the ability to make mathematical connections by solving problems in which there is a need to view mathematics as an integrated whole, identifying relationships between content strands, and integrating mathematics with other disciplines, allowing the flexibility to approach problems in a variety of ways within and beyond the field of mathematics.

Each content and process standard consists of sets of specific grade-level benchmarks or indicators of progress to identify developmentally appropriate knowledge and skills that students should learn at each stage of their K-12 mathematics education. The grade-level benchmarks or indicators of progress also establish the criteria for student accountability and assessment at each grade level.

The Nevada Proficiency Examination in Mathematics

The Nevada High School Proficiency Examination (HSPE) in Mathematics is designed to assess students' proficiency with respect to the 1998 Nevada K-12 Standards for Mathematics Education. A framework reference and an item specification matrix are used to guide the development of the Nevada HSPE assessments. The framework and matrix are based on the commonality of the content

and goals of the Nevada K-12 Standards for Mathematics Education, the National Assessment of Educational Progress (NAEP), and the National Council of Teachers of Mathematics (NCTM) Curriculum and Evaluation Standards for Mathematics. The Nevada HSPE framework document is available for review on the Nevada Department of Education website at: http://www.nde.state.nv.us

The HSPE Framework calls for assessment items in four mathematics content clusters based on the three cognitive ability domains suggested by the NAEP assessment framework (conceptual understanding, procedural knowledge, and problem solving skills) and the priorities set forth in the Nevada K-12 Standards for Mathematics Education.

The following chart shows the Ability Levels (Cognitive Domains) and Content Clusters that are reported on the Nevada Proficiency Examination in Mathematics.

Ability Levels (Cognitive Domains)	**Content Clusters**
A1 – Conceptual Understanding	C1 – Numbers and Operations (Standard 1)
A2 – Procedures	C2 – Algebra and Functions (Standard 2)
A3 – Problem Solving	C3 – Measurement and Geometry (Standards 3 & 4)*
	C4 – Data Analysis, Statistics and Probability (Standard 5)

* Approximately half of the items in Content Cluster 3 (C3) are from Standard 3 (Measurement) and the other half are from Standard 4 (Geometry).

The matrix that follows is designed to explain the configuration of the mathematics examination questions.

HSPE Mathematics Examination Item Matrix

Content Clusters/ Ability Levels (Cognitive Domains)	C1 Numbers and Operations	C2 Algebra and Functions	C3 Measurement and Geometry	C4 Data Analysis, Statistics, and Probability	Total Items	Percents
A1 Concepts	5	5	8	5	23	35%
A2 Procedures	3	3	4	5	15	30%
A3 Problem Solving	4	4	8	6	22	35%
Total Items	12	12	20	16	60	
Percents	20%	20%	33.5%	26.5%		100%

To demonstrate conceptual understanding (A1), students should show that they are able to:

- Recognize, label, and generate examples and/or non-examples of concepts;
- Use and interrelate models, diagrams, manipulatives, and varied representations of mathematical concepts;
- Use and apply mathematical facts and definitions;
- Identify and apply principles (e.g., provide and recognize valid statements generalizing relationships among concepts in conditional form);
- Compare, contrast, and integrate related concepts and principles to the nature of the concepts and principles;
- Recognize, interpret, and apply the signs, symbols, and terms used to represent concepts; and,
- Interpret assumptions and relations involving concepts in mathematical settings.

To demonstrate procedural knowledge (A2), students should show that they are able to:

- Select and appropriately apply correct procedures;
- Verify or justify the correctness of a procedure using concrete models or symbolic methods;
- Extend or modify procedures to deal with factors inherent in problem settings;
- Apply numerical algorithms appropriately to specific mathematical situations or settings;
- Perform non-computational functions such as rounding and ordering; and,
- Describe why a particular procedure will give a correct answer for a problem in a specific context or defined situation.

To demonstrate problem-solving skills (A3), students should show that they are able to:

- Correctly apply their accumulated knowledge of mathematics in new situations;
- Recognize and formulate problems;
- Determine the efficacy and relevance of data or information in problem solving situations;
- Use combinations of strategies, data, models, and procedures to answer questions;
- Use reasoning in new settings; and,
- Judge the reasonableness and correctness of solutions.

Reporting Category: C1 – Numbers and Operations

Ability Level: A1 – Conceptual Understanding

Performance Indicator: Read, write, add, subtract, multiply, and divide real numbers in various forms including radicals, exponents, and scientific notation.

Test Item:

One red blood cell is about 7.5×10^{-4} centimeters long.
What is the standard form of 7.5×10^{-4} ?

A 0.00075

B 0.0075

C 75

D 75,000

Correct Response A: The standard form of 7.5×10^{-4} is 0.00075.

Students should know that numbers written in scientific notation, such as 7.5×10^{-4}, include a decimal factor greater than or equal to 1 but less than 10 (in this case, 7.5) and a power of 10 in exponential form (in this case, 10^{-4}). The standard form of a number is found by multiplying the decimal factor by the power of 10.

Response B: This response is incorrect. It represents an error in which the student may have misinterpreted 10^{-4} to mean that the total number of decimal places in the standard form of 7.5×10^{-4} is four.

Response C: This response is incorrect. It represents an error in which the student may have found the product of 7.5 and 10 but did not take into account the influence of the negative exponent on the final answer.

Response D: This response is incorrect. It represents an error in which the student may have moved the decimal point in the multiplier four places to the right. This movement of the decimal point to the right would only be correct if the exponent associated with the ten were positive.

Reporting Category: C1 – Numbers and Operations

Ability Level: A2 – Procedural Skills

Performance Indicator: Compute with rational and irrational numbers to solve a variety of problems including rates, recipes, unit costs, and percents (e.g., discounts, interest, sales, prices, commissions, and taxes).

Test Item:

While conducting a survey, Sam noted that of the last 10 people who entered a shopping center, 6 were females and 4 were males. If this pattern continues, how many of the next 80 people who enter the shopping center will be males?

A 32

B 40

C 48

D 60

Correct Response A: If the pattern continues, 32 of the next 80 people who enter the shopping center will be males. Students may select from more than one correct procedure to solve this problem. Some students will notice that the percent of males in the group of 10 people is 40%. If the pattern continues, 40% of the next 80 people will also be males. Therefore, 40% of 80 is 0.40 x 80 which is 32 people. Some students may set up and solve a proportion similar to the following in which the letter x represents the number of people in the next 80 who will be males:

$\frac{4}{10} = \frac{x}{80}$; then, by finding cross products, $4(80) = 10x$;

$320 = 10x$; $x = \frac{320}{10}$; and finally $x = 32$.

Response B: This response is incorrect. It represents an error in which the student may have found the product of two numbers found in the question.

Response C: This response is incorrect. It represents an error in which the student may have found the number of females who should enter the shopping mall in the next 80 people.

Response D: This response is incorrect. It represents an error in which the student may have confused 60% of the first 10 people being female for 60 people out of the next 80 people being male.

Reporting Category: C1 – Numbers and Operations

Ability Level: A3 – Problem Solving

Performance Indicator: Estimate in problem-solving situations and in practical applications; determine the reasonableness of the answer and verify the results.

Test Item:

Lisa purchased 3 blouses at $19.95 each, 4 pairs of slacks at $14.95 each, and 1 pair of socks for $2.98. An additional 7% sales tax was added to her purchases. If Lisa pays with two one hundred dollar bills, how much change should she receive to the nearest dollar?

A $132

B $123

C $77

D $68

Correct Response D: Lisa should receive about $68 change.

This item requires students to be able to round purchase prices to the nearest dollar, find a sum of the prices, and then find the difference between the taxed sum and $200.

3 x $19.95 ≈ 3 x $20 ≈ $60
4 x $14.95 ≈ 4 x $15 ≈ $60
1 x $2.98 ≈ 1 x $3 ≈ $3

The sum of the three rounded prices is $123.
To find the taxed sum: $123 x 1.07 = $131.61 ≈ $132.
To find the change: $200 – $132 = $68

Response A: This response is incorrect. It represents an error in which the student may have found the approximate purchase price, including tax, but did not subtract it from $200.

Response B: This response is incorrect. It represents an error in which the student may have found the sum of the three rounded prices but did not calculate the tax and did not subtract the taxed sum from $200.

Response C: This response is incorrect. It represents an error in which the student may have failed to include the tax in the total price when finding the change.

Reporting Category: C2 – Algebra and Functions

Ability Level: A1 – Conceptual Understanding

Performance Indicator: Use inductive reasoning to find the missing term in number and geometric patterns and to generalize basic patterns to the n^{th} term, with and without calculators; use written, oral, and symbolic language to identify and describe patterns, sequences, and functions.

Test Item:

What is the missing term in the sequence below?
a, $2a$, $4a$, ___, $16a$

A $6a$

B $8a$

C $10a$

D $12a$

Correct Response B: Given the first term to be a, to find any other term in the sequence, the student should use the rule, "multiply the previous term by 2". The term that precedes the missing term is $4a$.

Use the rule: $4a \times 2 = 8a$.

Response A: This response is incorrect. It represents an error in which the student may have added the coefficients of the previous two terms to get the coefficient 6 (2 + 4 = 6), or counted up by twos starting at $2a$. ($2a$, $4a$, $6a$)

Response C: This response is incorrect. It represents an error in which the student may have subtracted the sum of the coefficients of 2a and 4a from the coefficient of $16a$. [16 – (2 + 4) = 10]

Response D: This response is incorrect. It represents an error in which the student may have multiplied the coefficient of the third term by 3 to get the coefficient 12. (4 x 3 = 12)

Reporting Category: C2 – Algebra and Functions

Ability Level: A2 – Procedural Skills

Performance Indicator: Add, subtract, multiply, and factor (1st and 2nd degree) polynomials, describing each step in the process and the connection between the algebraic process and the arithmetic process; use simple quadratic equations with integer roots to solve practical and mathematical problems.

Test Item:

Simplify $(x^2 - 3x + 10) - (x^2 + 2x - 7)$.

A 3

B $-x + 3$

C $-5x + 17$

D $2x^2 - x + 3$

Correct Response C: The student should use the algorithm for subtraction of polynomials. Subtraction of a number is equivalent to the addition of its inverse.

$(x^2 - 3x + 10) - (x^2 + 2x - 7)$ is equivalent to $(x^2 - 3x + 10) + (-x^2 - 2x + 7)$. The sum of $(x^2 - 3x + 10)$ and $(-x^2 - 2x + 7)$ is $(x^2 - x^2 - 3x - 2x + 10 + 7)$ which simplifies to $-5x + 17$.

Response A: This response is incorrect. It represents an error in which the student may have found the sum of +10 and –7 rather than the sum of +10 and +7.

Response B: This response is incorrect. It represents an error in which the student did not find the sum of $(x^2 - 3x + 10)$ and the inverse of $(x^2 + 2x - 7)$. Instead, the student may have found the sum of $-3x$ and $2x$ rather than the sum of $-3x$ and $-2x$.

Response D: This response is incorrect. It represents an error in which the student did not find the sum of $(x^2 - 3x + 10)$ and the inverse of $(x^2 + 2x - 7)$. Instead, the student may have found the sum of $(x^2 - 3x + 10)$ and $(x^2 + 2x - 7)$ to be $2x^2 - x + 3$.

Reporting Category: C2 – Algebra and Functions

Ability Level: A3 – Problem Solving

Performance Indicator: Identify, model, describe, and evaluate relationships, including functions, using a variety of methods with and without technology.

Test Item:

An airport taxi charges customers a \$2.50 pick-up fee plus \$0.25 for each $\frac{1}{4}$ mile traveled. Yuan's father paid \$15.50 to ride from the airport to his house in a taxi. How far from the airport is his house?

A $15\frac{1}{2}$ miles

B 13 miles

C 10 miles

D $3\frac{1}{4}$ miles

Correct Response B: The student can solve this problem by setting it up as a linear equation: $y = x + 2.50$, where y represents the total charge for the taxi ride in dollars, x represents the distance from the airport to the house, in miles, and 2.50 represents the fixed pick-up fee. The equation can also be written: $y = 1x + 2.50$. The coefficient 1, in front of the x, indicates that there is a charge of \$1 per mile traveled. The student must glean this information from a careful reading of the problem.

Then, by substitution: $15.50 = x + 2.50$.
Subtract 2.50 from both sides of the equation: $13 = x$.
The distance between the airport and the house is 13 miles.

Response A: This response is incorrect. It represents an error in which the student may not have subtracted the fixed pick-up fee from the total charge before finding the distance between the airport and the house.

Response C: This response is incorrect. It represents an error in which the student may have divided the fixed pick-up fee of 2.50 by the charge per mile of 0.25.

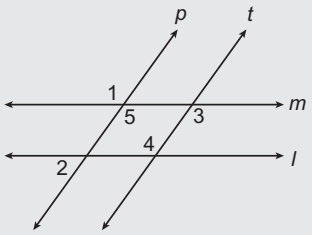
Response D: This response is incorrect. It represents an error in which the student may have first found the difference between 15.50 and 2.50, and then multiplied that difference by 0.25.

Reporting Category: C3 – Measurement and Geometry

Ability Level: A1 – Conceptual Understanding

Performance Indicator: Use complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons to solve practical problems.

Test Item:



In the diagram above, line m || line l and line p || line t and line p is not $\perp$ to line m.

Which angle is supplementary $\angle$ l?

A $\angle 2$

B $\angle 3$

C $\angle 4$

D $\angle 5$

Correct Response A: $\angle 1$ and $\angle 2$ are exterior angles on the same side of transversal p, therefore they are supplementary.

Response B: This response is incorrect. It represents an error in which the student may not have recognized that $\angle 3$ is congruent to $\angle 5$ because they are corresponding angles, and $\angle 5$ is congruent to $\angle 1$ because they are vertical angles.

Response C: This response is incorrect. It represents an error in which the student may not have recognized $\angle 4$ is congruent to $\angle 3$ because they are alternate interior angles, and $\angle 3$ is congruent to $\angle 5$ because they are corresponding angles, and that $\angle 5$ is congruent to $\angle 1$ because they are vertical angles.

Response D: This response is incorrect. It represents an error in which the student may not have recognized that $\angle 1$ and $\angle 5$ are vertical angles and are therefore congruent.

Reporting Category: C3 – Measurement and Geometry

Ability Level: A2 – Procedural Skills

Performance Indicator: Use coordinate geometry to graph linear equations, determine slopes of lines, identify parallel and perpendicular lines, and find possible solutions to sets of equations; use algebraic techniques to solve problems determined by geometric relationships.

Test Item:

What are the coordinates of the x-intercept of the line $2x + 5y = 10$?

A (0, 5)

B (5, 0)

C (0, 2)

D (2, 0)

Correct Response B: The x-intercept of a line is the point (x, y) on a coordinate plane where the line touches or crosses the x-axis. The coordinates of the x-intercept are $(x, 0)$ because the y value of the x-intercept is always 0.

To find the coordinates of the x-intercept of $2x + 5y = 10$ substitute 0 for y in the equation giving: $2x + 5(0) = 10$. Then, $2x = 10$. Dividing both sides of the equation by 2 we get $x = 5$.

Therefore, the coordinates of the x-intercept of the equation are (5, 0).

Response A: This response is incorrect. It represents an error in which the student may have reversed the positions of the numbers in the coordinate pair that identifies the x-intercept.

Response C: This response is incorrect. It represents an error in which the student may have found the coordinates of the y-intercept of the line.

Response D: This response is incorrect. It represents an error in which the student may have reversed the positions of the numbers in the coordinate pair that identifies the y-intercept of the line.

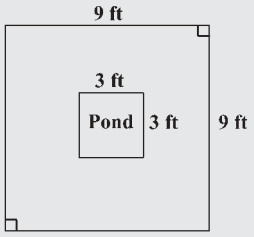
Reporting Category: C3 – Measurement and Geometry

Ability Level: A3 – Problem Solving

Performance Indicator: Use relationships (e.g., proportions) and formulas (indirect measurement) to determine the measurement of unknown dimensions, angles, areas, and volumes in order to solve problems.

Test Item:

A 3-feet by 3-feet square fishpond is surrounded by a 9-feet by 9-feet walkway as shown below.



Which expression could be used to find the area of the walkway?

A $9^2 - 3^2$ square feet

B $9^2 + 3^2$ square feet

C (9 + 9 + 9 + 9) + (3 + 3 + 3 + 3) square feet

D (2 x 9) – (2 x 3) square feet

Correct Response A: To solve this problem, the student must find the difference between the combined area of the walkway and the fishpond, and the area of the fishpond. The combined area is the product of the outer length and the outer width of the walkway: $9 \times 9 = 9^2$ square feet. The area of the fishpond is the product of the length and width of the pond: $3 \times 3 = 3^2$ square feet. The difference between the area of the fishpond and the combined area of the walkway and the fishpond is: $9^2 - 3^2$ square feet.

Response B: This response is incorrect. It represents an error in which the student may have decided to use the sum of the combined area and the area of the fishpond to find the area of the walkway.

Response C: This response is incorrect. It represents an error in which the student may have decided to use the difference between the outer perimeter of the walkway and the perimeter of the fishpond to find the area of the walkway.

Response D: This response is incorrect. It represents an error in which the student may have decided that finding the difference between the product of 2 and 9, and the product of 2 and 3 was the appropriate way to calculate the area of the walkway.

Reporting Category: C4 – Data Analysis, Statistics, and Probability

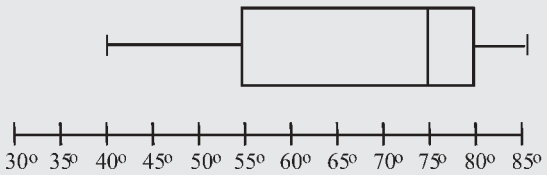
Ability Level: A1 – Conceptual Understanding

Performance Indicator: Organize, display, read, and analyze data, with and without technology, using a variety of displays including box-and-whisker plots.

Test Item:

The box-and-whisker plot below represents the daily high temperatures for Lake Tahoe over the past year.

Lake Tahoe Temperatures



What was the **median** high temperature?

A 55°

B 75°

C 80°

D 85°

Correct Response B: In order to answer this question the student must be able to read data from a box-andwhisker plot. In a box-and-whisker plot the vertical line found inside the box corresponds to the median of the data on the number line below the plot.

In this item the vertical line inside the box corresponds to a temperature of 75° on the number line below. Therefore, 75° is the median of the daily high temperatures.

Response A: This response is incorrect. It represents an error in which the student may believe that the data point representing the boundary of the first quartile of the data is the median of the data.

Response C: This response is incorrect. It represents an error in which the student may believe that the data point representing the boundary of the third quartile of the data is the median of the data.

Response D: This response is incorrect. It represents an error in which the student may believe that the data point of the maximum temperature is the median of the data.

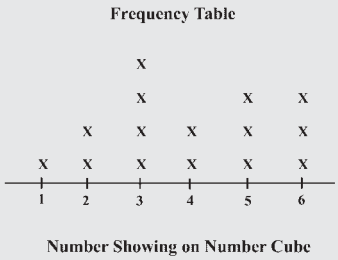
Reporting Category: C4 – Data Analysis, Statistics, and Probability

Ability Level: A2 – Procedural Skills

Performance Indicator: Select and use the measures of central tendency such as mean, median, and mode, and variability including range, distribution, and possible outliers that are appropriate for given situations.

Test Item:

The line plot below shows the outcomes of rolling a number cube whose faces are labeled with the integers 1 through 6. The number cube was rolled fifteen times.



Which number represents the range of the outcomes?

A 2

B 3

C 4

D 5

Correct Response D: The student must understand how to read a line plot and must be able to find the range of a set of data in order to answer this question correctly.

The line plot shows that the numbers 1, 2, 3, 4, 5, and 6 were rolled various numbers of times during the fifteen rolls. For example, the two Xs above the number 4 means that the number 4 was rolled two times. The range of a set of data is the difference between the largest number and the smallest number. In this question, the largest number rolled was 6, and the smallest number rolled was 1. Therefore, the range is 6 – 1 = 5. (Note that the number of times a 6 or a 1 was rolled is not significant when finding the range.)

Response A: This response is incorrect. It represents an error in which the student may have tried to find the range by finding the difference between the number of times a 6 was rolled (three times) and the number of times a 1 was rolled (one time.)

Response B: This response is incorrect. It represents an error in which the student may have confused the mode of the outcomes with the range of the outcomes.

Response C: This response is incorrect. It represents an error in which the student may have confused the median of the outcomes with the range of the outcomes.

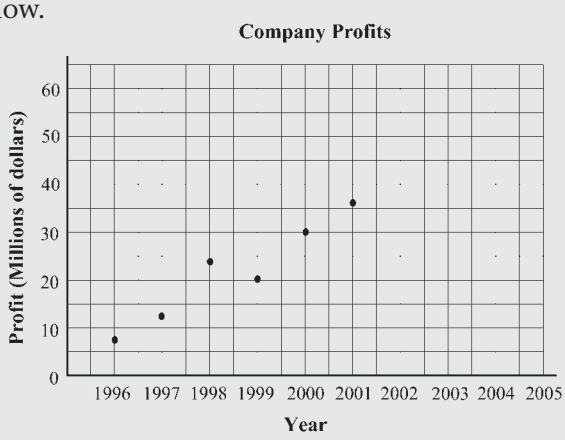
Reporting Category: C4 – Data Analysis, Statistics, and Probability

Ability Level: A3 – Problem Solving

Performance Indicator: Formulate reasonable inferences and projections based on interpolations and extrapolations of data to solve problems.

Test Item:

A software company's profits over six years are shown in the graph below.



If the trend in profit continues, approximately how much profit can the company expect to make, in millions of dollars, in 2004?

A 30 to 40

B 40 to 50

C 50 to 60

D 60 to 70

Correct Response C: The student must understand the concept of best-fit line for data in a scatter plot in order to extrapolate data for the year 2004 in this question. The best-fit line is a straight line that can be drawn on a scatter plot. It is as close as possible to each of the data points on the scatter plot.

In this case, the best-fit line passes through the points (1996, 7.5) and (2001, 36). If this line is extended to intersect with the coordinate grid at 2004, the profit can be predicted to be about 55 million dollars.

Response A: This response is incorrect. It represents an error in which the student may have used the existing data points for the years 2000 and 2001 to predict profit in 2004 without relying on a best-fit line.

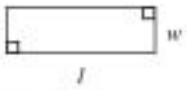
Response B: This response is incorrect. It represents an error in which the student may have used the existing data points for the years 1996 and 1999 to generate a best-fit line to predict profit in 2004.

Response D: This response is incorrect. It represents an error in which the student may have used the existing data points for the years 1996 and 1998 to generate a best-fit line to predict profit in 2004.

Formula Sheet

Note to Student: ***You may use these formulas throughout this entire test. Feel free to use this Formula Sheet as needed during your testing time.***

Rectangle



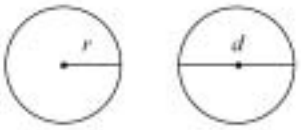
Perimeter $P = 2l + 2w$
or
$P = 2(l + w)$

Area $A = lw$

Parallelogram

Area $A = bh$

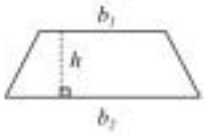
Circle



Circumference $C = 2r\pi$
or
$C = \pi d$

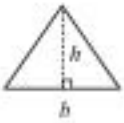
Area $A = \pi r^2$

Trapezoid



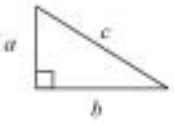
Area $= \frac{1}{2} h(b_1 + b_2)$

Triangle



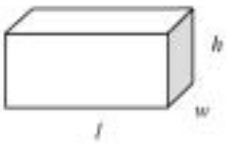
Area $A = \frac{1}{2} bh$

Pythagorean Theorem



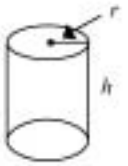
$a^2 + b^2 = c^2$

Rectangular Solid



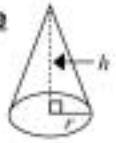
Volume $V = lwh$
Surface Area $SA = 2lw + 2lh + 2hw$

Cylinder



Volume $V = \pi r^2 h$

Cone



Volume $V = \frac{1}{3} \pi r^2 h$

Other Necessary Information

1 quart ≈ 0.95 liters

1 inch = 2.54 centimeters

1 pound ≈ 0.45 kilograms

$^\circ F = \frac{9}{5} C + 32$

$^\circ C = \frac{5}{9} (F - 32)$

1 It took Tom 3 hours of driving, with no stops, to travel 190 miles. Which numerical expression can be used to find his average rate of speed in miles per hour?

A 190 x 3

B 190 ÷ 3

C 3 x 187

D 3 ÷ 190

2 Penny sells real estate. She earns a 6% commission on the sale price of property she helps to sell. What is Penny's commission on the sale of a house for $75,000?

A $7,500

B $6,000

C $4,500

D $4,200

3 A sweater that normally sells for $35 is on sale for 25% off. Which is the **best** estimate of the sale price?

A $8

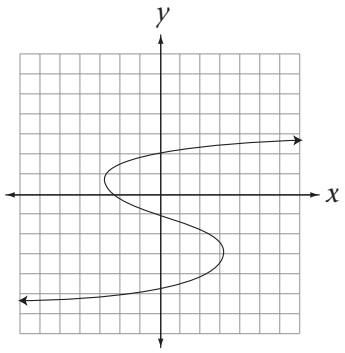
B $9

C $26

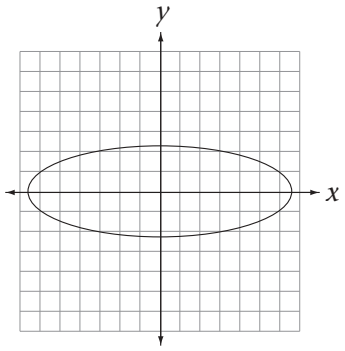
D $28

4 Which graph represents a function of x?

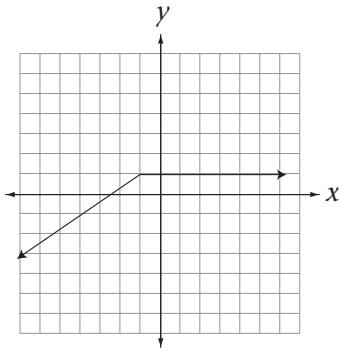
A



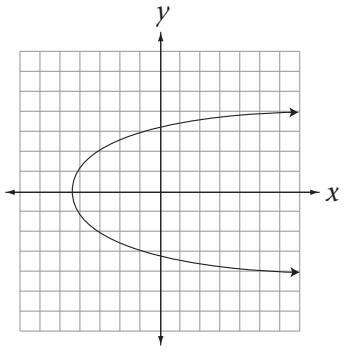
B



C



D



5 The area of Diane's garden can be represented by $(x + 3)(2x - 5)$. Which of these expressions is equivalent to the area of Diane's garden?

A $2x^2 - 15$

B $2x^2 + x - 15$

C $3x - 15$

D $2x^2 + 11x - 15$

6 What are the next two terms in the sequence below?

1, 2, 4, 8, ___, ___

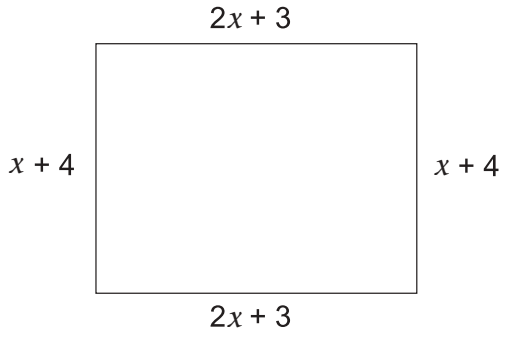
A 10, 12

B 14, 22

C 16, 32

D 32, 64

7



What is the perimeter of the figure above if $x = 3$?

A 25 units

B 30 units

C 32 units

D 63 units

8 A circle's circumference is 16π units. What is the length of the circle's diameter?

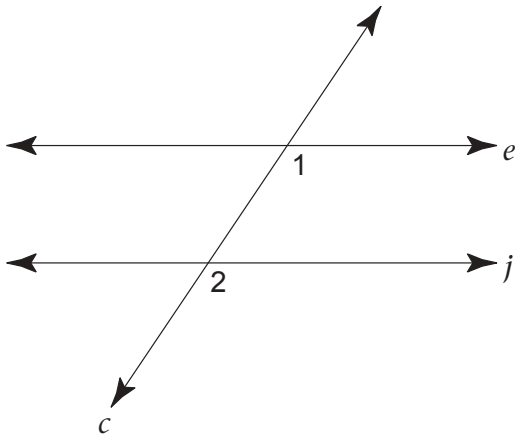
A 4 units

B 8 units

C 16 units

D 32 units

9 In the diagram below, line e is parallel to line j. The measure of angle 1 is 65°.



What is the measure of angle 2?

A 25°

B 65°

C 115°

D 130°

10 The Morris family drove their car on a summer vacation. If the family wants to calculate the average speed they drove during the trip, they could

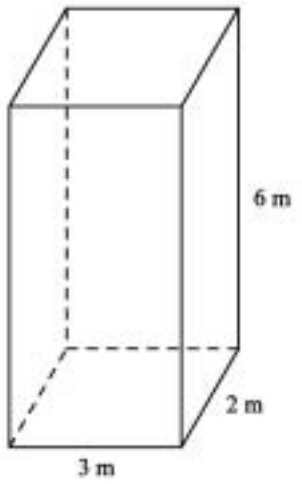
A multiply the distance driven by the amount of time spent driving.

B divide the distance driven by the number of gallons of gas used.

C multiply the rate of travel by the amount of time spent driving.

D divide the distance driven by the amount of time spent driving.

11 What is the volume of the rectangular prism below?



A 11 m^3

B 12 m^3

C 30 m^3

D 36 m^3

12 The diagonals of a rhombus measure 8 units and 6 units. What is the measure of each side of the rhombus?

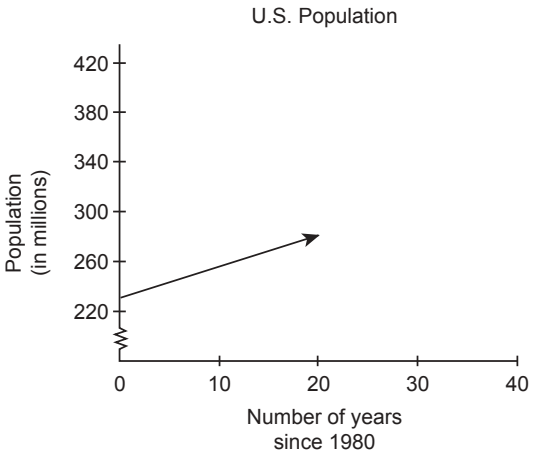
A 5 units

B 7 units

C 10 units

D 14 units

13 The population of the United States was approximately 226 million in 1980 and 249 million in 1990. The graph below shows how the population has increased over the number of years that have passed since 1980.



What is the meaning of the slope of the line?

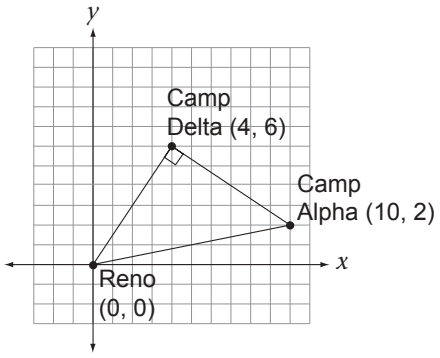
A The population increased 0.23 million people over 10 years.

B The population increased 2.3 million people per year.

C The population increased 2.3 million people over 10 years.

D The population increased 230 million people per year.

14 The coordinate map below shows the location of two camps in a wilderness area in relationship to Reno. The three locations have been connected, forming a right triangle.



Which statement explains how you know the triangle is a right triangle?

A The product of the slopes of the line segments intersecting at Camp Delta is –1.

B The slopes of two of the line segments are positive and the third is negative.

C The sum of the slopes of the line segments intersecting at Camp Delta is –1.

D The slopes of the three line segments are all different.

15 Which stem-and-leaf plot represents the data below?

{32, 12, 20, 25, 16, 30, 22}

A

1	2	6	
2	0	2	5
3	0	2	

Key : 1 | 2 = 12

B

3	2	0	
1	0	6	
2	0	5	2

Key : 3 | 2 = 32

C

0	2	3	
2	1	2	3
5	2		
6	1		

Key : 0 | 2 = 2

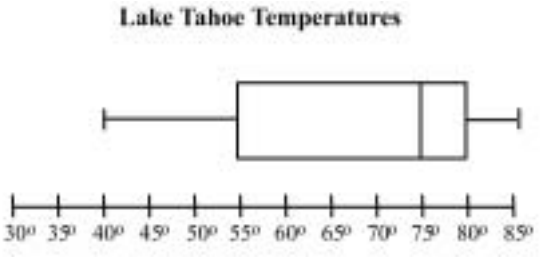
D

2	3	1	2
0	2	3	
5	2		
6	1		

Key : 2 | 3 = 23

16 The box-and-whisker plot below represents the daily high temperatures for Lake Tahoe over the last year.

What was the maximum high temperature?



A 55°

B 75°

C 80°

D 85°

17 How many different 4-digit numbers can be made from the digits 2, 3, 5, and 7 if the digits cannot be repeated?

A 4

B 16

C 24

D 256

18 What is the **mode** of the data in the stem-and-leaf plot below?

1	6
2	2 4 4
3	0 3 6 9
4	5 5 5 8 9 9
5	2 3
6	1 1
7	2

Key: 1 | 6 = 16

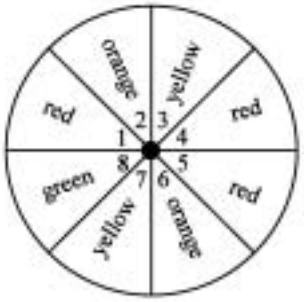
A 24

B 45

C 49

D 61

19 Patty and Jen are playing a board game using the spinner below.



What is the probability the spinner will land on an odd number in a red section?

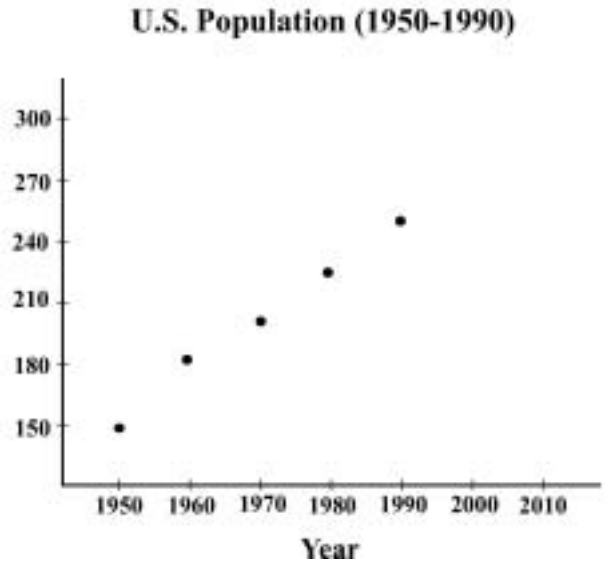
A $\frac{1}{4}$

B $\frac{1}{2}$

C $\frac{5}{8}$

D $\frac{7}{8}$

20 The scatter plot below shows the population of the United States every 10 years from 1950 to 1990.



If the trend in the scatter plot continues, which is the most reasonable estimate for the population in **2010**?

A 260 million

B 270 million

C 290 million

D 300 million

Item Number	Reporting Category	Ability Level	Answer Key
1	C1	A1	B
2	C1	A2	C
3	C1	A3	C
4	C2	A1	C
5	C2	A2	B
6	C2	A1	C
7	C2	A3	C
8	C3	A1	C
9	C3	A1	B
10	C3	A1	D
11	C3	A2	D
12	C3	A3	A
13	C3	A3	B
14	C3	A3	A
15	C4	A1	A
16	C4	A1	D
17	C4	A2	C
18	C4	A2	B
19	C4	A3	A
20	C4	A3	D

Introduction

The National Science Education Standards define science literacy in a very broad sense.

Scientific literacy is the knowledge and understanding of scientific concepts and processes required for personal decision making, participation in civic and cultural affairs, and economic productivity. It also includes specific types of abilities.

Scientific literacy means that a person can ask, find, or determine answers to questions derived from curiosity about everyday experiences. It means that a person has the ability to describe, explain, and predict natural phenomena. Scientific literacy entails being able to read with understanding articles about science in the popular press and to engage in social conversation about the validity of the conclusions. Scientific literacy implies that a person can identify scientific issues underlying national and local decisions and express positions that are scientifically and technologically informed. A literate citizen should be able to evaluate the quality of scientific information on the basis of its source and the methods used to generate it. Scientific literacy also implies the capacity to pose and evaluate arguments based on evidence and to apply conclusions from such arguments appropriately.

Individuals display their scientific literacy in different ways, such as appropriately using technical terms, or applying scientific concepts and processes. And individuals often will have differences in literacy in different domains, such as more understanding of life-science concepts and words, and less understanding of physical-science concepts and words.

Scientific literacy has different degrees and forms; it expands and deepens over a lifetime, not just during the years in school. But the attitudes and values established toward science in the early years will shape a person's development of scientific literacy as an adult.

NSES, http://www.nap.edu/html/nses/html/2.html#perspectives

The goals of science assessments in Nevada are at least threefold. First, they will provide a measure of student achievement relative to the intended learning outcomes. Assessment and learning are closely related, so as the intended outcomes are defined for assessment, teachers and students will redefine their expectations to meet the outcomes. Second, they should provide an operational definition of important curricula, and a mechanism for communicating the expectations of the standards to everyone concerned. Third, there should be a feedback mechanism in the state's science education system that can lead to changes by stimulating adjustments in policy, guiding professional development, promoting changes in instructional practices, and encouraging students to improve their understanding of science.

Nevada's Content and Performance Standards in Science define the breadth and depth of science that all our students will come to understand. The intended learning outcomes of science education within the science standards are rich and varied. These outcomes include:

- Knowing and understanding scientific facts, concepts, principles, laws, and theories.
- The ability to inquire and to design and perform scientific investigations.
- The ability to reason scientifically.
- The ability to communicate effectively about science.
- The ability to use science to make personal decisions and to take positions on appropriate issues.

The Nevada Science Content Standards consist of 24 individual standards that are clustered into four categorical strands for reporting purposes on the HSPE Science Assessment:

C1 – Physical Science (Standards 1 through 5)
C2 – Life Science (Standards 6 through 9)
C3 – Earth/Space/Environmental Science (Standards 11 through 17)
C4 – Science Skills, Processes, and Investigations (Standards 18 through 24)

C1 Physical Science

The Physical Science component of the HSPE Science Assessment focuses on the goal of all students demonstrating an understanding of the principles of matter and energy. Particular attention is given to the applications of physical laws.

The HSPE Science Assessment will focus on the following physical-science concepts:

Forces and Motion:

- Concepts of linear, circular and projectile motion
- An understanding of the causes and effects of motion, including Newton's laws of motion and momentum
- Application of Newton's laws to explain motion of objects in the solar system and predict phenomena such as a day, year, phases of the moon, and eclipses

Physical and Chemical Properties of Matter:

- Intrinsic and extrinsic physical properties of matter, including the causes and effects of changes in the state of matter in the system
- The particulate nature of matter, including atomic structure
- Chemical reactions, including conservation of matter, factors affecting the rates of reactions, and chemical bonding

Energy:

- Conservation of energy, including work and types of energy transformations
- Characteristics and properties of mechanical waves, including sound
- Characteristics and properties of electromagnetic waves, including electric and magnetic waves (due to extensiveness of information, visible light is presented separately)
- Nature and behavior of visible light waves

C2 Life Science

The Life Science component of the HSPE Science Assessment is based on the goal of all students demonstrating an understanding of the nature and function of living things. Particular attention is given to the structures of plants and animals, the diversity of species, and how that diversity is passed between generations and changes over time.

The HSPE Science Assessment will focus on the following life-science concepts:

Structures, Functions, and Systems in plants and animals:

- Cell structure, including the basic components of plant and animal cells and their functions
- Interactions of cells within living systems, including how cells obtain and use resources and energy

- Control of cellular functions, including mechanisms for communication between cells

Diversity and Change:

- Biological diversity, including the species as the basic level of classification, diversity within species and importance of biological diversity in ecosystems
- Genetic variation, including patterns of inheritance, mutation, and reproduction
- Adaptation, natural selection, changes in diversity over time, and extinction

Ecology:

- Relationships and interactions in ecosystems, including energy flow in communities, and the relationship between biodiversity, stability and change in ecosystems

C3 Earth/Space/Environmental Science

The Earth/Space and Environmental Science component of the science assessment looks at students' understanding of the features and structures of the Earth's system, and the events and processes that caused their formation. Students should demonstrate understanding of structures, processes, and events below, on, and above the Earth's surface. Students should also understand how energy is transferred and transformed in the Earth's system and the resulting cycles of matter. The ideas of natural resources and the impact of changing technology on their use should be developed.

The HSPE Science Assessment in this area will focus on:

The Earth:

- Landforms and the processes resulting in their change over time
- Bio-geochemical cycles of matter, including the water cycle
- Energy transfer and transformation, including patterns of weather and climate

Ecosystems:

- Environmental consequences of human population growth, including impacts of changing technologies on patterns of natural resource use
- Impacts of human activities on dynamic equilibrium in natural systems, including impacts on local environments and economies

C4 Science Skills, Processes, and Investigations

The component of the HSPE Science Assessment dealing with science processes, skills, and investigations asks students to demonstrate an understanding of how the tools of science are used to build new knowledge. Beginning with simple observations, students use the processes and skills of science to test models and predictions and to critically evaluate the data they collect. Students are expected to follow written instructions, use the tools of mathematics to evaluate their data, and be able to effectively communicate the results of their investigations to others.

The HSPE science assessment in this area will focus on:

Scientific investigations:

- Evaluating data
- Making observations
- Working with graphical models
- Using the processes of science to test models and predictions, including the statistical analysis

of the resulting data

- Analyzing results from their own work as well as others, including use of logical argument, criticism, and skepticism
- Following instructions and communicating results

The test uses selected response (multiple choice) items to measure student achievement relative to the intended outcomes defined in the content and performance standards. Items on the test are carefully chosen to measure students' understanding, reasoning, and use of knowledge rather than checking whether they have memorized isolated pieces of information. The underlying goal is to assess knowledge that is rich and connected, rather than discrete and detail oriented.

The questions on the exam are divided into three Ability Level (Cognitive Domain) categories.

A1 – Fundamental Principles

Questions in this category include the basic knowledge of science content and processes, and will assess a variety of information, including:

- Facts and events that the student learns from science instruction
- Information about the processes of scientific investigation

A2 – Conceptual Understanding

The primary goal of science instruction is to build a student's conceptual understanding. Questions in this category go beyond the basic facts to stress the connections between and organization of factual knowledge in science. Students will demonstrate their abilities to use information from a broad range of science content areas. Questions in this category will assess a variety of information, including:

- Concepts, facts, principles, laws, and theories used to explain observations or make predictions about the natural world
- Connections between basic facts and concepts and the larger general organizing principles (the "Big Ideas") of science

A3 – Practical Reasoning

Questions in this category assess students' ability to use and apply their scientific understanding to solve new and unique real-world problems. This is the dimension of the assessment where students demonstrate a broader, more applied understanding of science content. In addition to connections of specific content to the organizing principles, students should be able to apply their scientific understanding to areas and problems not directly linked to the classroom experience.

The science test has 60 questions divided among four content clusters. The balance of items between the clusters is determined by the numbers of objectives in each instructional strand included on the test. The balance of question types (Ability Levels) is derived from recommendations from the National Assessment of Educational Progress (NAEP) framework and the state's assessment development committees.

The blueprint that was used to construct the test forms is based on the following matrix. The matrix represents the target for numbers of questions in each strand and question type. The list of objectives included with each cluster in the following description (e.g., Forces & Motion) are selected from the prioritized lists of standards described above and are examples of objectives that focus on content included in the test. They are not intended to establish limits of what will be on the tests.

HSPE Science Examination Item Matrix

Content Clusters/ Ability Levels (Cognitive Domains)	C1 Physical Science	C2 Life Science	C3 Earth/Space/ Environmental Science	C4 Scientific Skills, Processes, & Investigations	Total Items	Percents
Fundamental Principles	4	4	4	3	15	25
Conceptual Understanding	9	9	7	6	31	52
Practical Reasoning	5	5	4	0	14	23
Total Items	18	18	15	9	60	
Percents	30	30	25	15		100

Reporting Category: C1 – Physical Science

Ability Level: A1 – Fundamental Principles

Performance Indicator: Investigate and describe how waves can superimpose on one another, bend around corners, reflect off surfaces, be absorbed by materials they enter, and change direction when entering a new material.

Test Item:

Light is best refracted by

A mirrors.

B wood.

C glass.

D metal.

Correct Response C: Glass is a medium with a different density than air. Glass is translucent enough to have light pass through.

Response A: This response is incorrect. Mirrors typically reflect, not refract, light.

Response B: This response is incorrect. Wood is opaque; therefore it cannot refract light.

Response D: This response is incorrect. Metal is opaque; therefore, it cannot refract light.

Reporting Category: C1 – Physical Science

Ability Level: A2 – Conceptual Understanding

Performance Indicator: Investigate and describe how chemical reaction rates depend on conditions in the reacting system, the properties of reacting materials, and the presence of certain rate-regulating chemicals.

Test Item:

Chemical reaction rates can most effectively be increased by

A decreasing reactant particle size.

B increasing the volume of the container.

C decreasing temperature.

D increasing the number of reactants.

Correct Response A: Decreasing particle size increases surface area exposed for reaction.

Response B: This response is incorrect. Increasing volume may cause reactants to collide less frequently and slow rate of reaction.

Response C: This response is incorrect. Decreasing temperature reduces the rate of particle collision.

Response D: This response is incorrect. Adding reactants may cause competitive inhibition of reaction, decreasing the reaction rate.

Reporting Category: C1 – Physical Science

Ability Level: A3 – Practical Reasoning

Performance Indicator: Investigate and describe how the usefulness of a simple machine such as a wheel or axle is based on its function, mechanical advantage, and efficiency.

Test Item:

Which of these items can be best used as an inclined plane?

A wheelbarrow

B tennis racquet

C doorknob

D staircase

Correct Response D: The staircase can be used to move objects vertically.

Response A: This response is incorrect. The handles work as a lever and the wheel and axle help with movement.

Response B: This response is incorrect. The tennis racquet adds mechanical advantage because of increased centripetal force. It is impractical to use a racquet as an inclined plane.

Response C: This response is incorrect. The doorknob has a wheel and axle element with the locking mechanism. The knob itself acts as a lever.

Reporting Category: C2 – Life/Environmental Science

Ability Level: A1 – Fundamental Principles

Performance Indicator: Explain how gene **mutations** may be caused by a variety of influences; when mutations occur in sex cells, they can be passed on to offspring.

Test Item:

A mutation in which of these types of cells will affect offspring characteristics?

A skin

B lung

C gland

D gamete

Correct Response D: Since gametes are the cells that unite to form zygotes, changes to them will affect gene expression in offspring.

Response A: This response is incorrect. Mutation to skin cells may cause discoloration or cancer, but it will not affect fertility or offspring characteristics.

Response B: This response is incorrect. Mutation in lung cells may cause cancer or other dysfunction of the lung, but it will not affect offspring.

Response C: This response is incorrect. Mutation to glands will affect hormonal and overall chemical balance, but it will not affect offspring.

Reporting Category: C2 – Life/Environmental Science

Ability Level: A2 – Practical Reasoning

Performance Indicator: Investigate and describe how food molecules are broken down through a series of chemical reactions to provide energy and the material to make new molecules.

Test Item:

Which of these molecules is most important for the production of ATP?

A glucose

B salt

C lipid

D peroxide

Correct Response A: Before ATP can be made during the Kreb Cycle, glucose is converted to pyruvate.

Response B: This response is incorrect. Salt is important for water balance in cells, but it is not involved in ATP production.

Response C: This response is incorrect. Lipid molecules can be converted into usable energy forms, but all materials need to be converted to glucose before glycolysis can occur.

Response D: This response is incorrect. Peroxide is not involved in ATP production.

Reporting Category: C2 – Life/Environmental Science

Ability Level: A3 – Practical Reasoning

Performance Indicator: Explain how the classification of species is based on similarities (e.g., structural, genetic, molecular) which indicate evolutionary relationships.

Test Item:

Bone is to chicken as cartilage is to

A shark.

B wolf.

C clam.

D worm.

Correct Response A: The analogy has to do with the skeletal system in the animal. Chickens have bones and sharks have a cartilaginous skeleton. Even though this item is relatively simple, it requires the student to recognize the relationship in the analogy and how to properly complete it.

Response B: This response is incorrect. Wolves, like chickens, also have a bony skeleton.

Response C: This response is incorrect. Clams have an exoskeleton.

Response D: This response is incorrect. Worms do not have a skeletal system.

Reporting Category: C3 – Earth/Space/Environmental Science

Ability Level: A1 – Fundamental Principles

Performance Indicator: Investigate and describe how landforms are the result of a combination of constructive and destructive forces resulting from weathering, erosion, and the movement of **lithosphere** plates.

Test Item:

The forces that form folded mountains are considered to be constructive because the forces caused

A irregular shaping of a landform.

B other landforms to move closer together.

C a new landform.

D a climate change because of the landform.

Correct Response C: The stem and option C paraphrase the definition of a "constructive force."

Response A: This response is incorrect. Irregular shaping is caused by weathering and erosion.

Response B: This response is incorrect. Landforms do not move closer to each other as a result of constructive forces.

Response D: This response is incorrect. Lithosphere activity may cause changes to area climate, but it is not part of the definition of "constructive forces."

Reporting Category: C3 – Earth/Space/Environmental Science

Ability Level: A2 – Conceptual Understanding

Performance Indicator: Compare and contrast the variety of methods by which geologic time is determined, including **radioactive dating.**

Test Item:

The best method for determining how long ago organisms lived is to

A calculate the fossil's density.

B compare fossil appearance to modern organisms.

C measure how deep fossils are buried.

D use radiocarbon dating on fossils.

Correct Response D: Radiocarbon dating will give a measurement based on decomposition of carbon atoms. This is the most accurate method used.

Response A: This response is incorrect. Calculating density will provide a number, but it will give no information regarding age.

Response B: This response is incorrect. Comparing appearance can give evolutionary clues, but it will not provide a quantity for years. Many surviving animals look very "pre-historic."

Response C: This response is incorrect. Measuring depth can give insight to relative age, but it is not a quantifiable measurement. Depth is also dependent on Earth's movements.

Reporting Category: C3 – Earth/Space/Environmental Science

Ability Level: A3 – Practical Reasoning

Performance Indicator: Investigate and describe how rocks and minerals have different characteristics that reflect their origins and use.

Test Item:

Which of the following characteristics of rocks can be caused by the slow cooling of magma?

A large crystals

B colorful grains

C smooth cover

D symmetrical shape

Correct Response A: Slow cooling allows the crystals time to form more completely before solidifying.

Response B: This response is incorrect. Many rocks have colorful grains, but the color is a function of the elements included.

Response C: This response is incorrect. Smoothness is common, but it is a product of weathering and/or crystal shape.

Response D: This response is incorrect. Symmetry, like other traits, is mostly the product of the type of minerals in the rock.

Reporting Category: C4 – Scientific Investigation

Ability Level: A1 – Fundamental Principles

Performance Indicator: Distinguish between hypotheses, laws, theories and rules, and explain the level of their limitations.

Test Item:

A law is an explanation of scientific phenomenon that is

A largely accepted by scientists.

B based on observations.

C supported by most scientific data.

D proven and is without exception.

Correct Response D: Option D completes the definition of a "law."

Response A: This response is incorrect. Laws are **completely** accepted as fact.

Response B: This response is incorrect. Laws are based on mathematical proof, not observations.

Response C: This response is incorrect. The option allows for some data that is not supported.

Reporting Category: C4 – Scientific Investigation

Ability Level: A2 – Conceptual Understanding

Performance Indicator: Repeat experimentation for statistical analysis and to produce conclusions that are without bias.

Test Item:

After data is gathered from an experiment, doing which of these will most help make results more reliable?

A asking the teacher to check data

B changing the variables for another experiment

C repeating the experiment for additional data

D reporting the information on a table

Correct Response C: Reliability is dependent on repeatability.

Response A: This response is incorrect. The teacher will have nothing to add to the validity of the numbers.

Response B: This response is incorrect. Changing variables compromises the data.

Response D: This response is incorrect. Presentation of the report does not affect data reliability.

1 Which of the following is an intrinsic characteristic of an object?

A mass

B density

C length

D volume

2 Which of the following is a characteristic used to classify organisms into taxonomic groups?

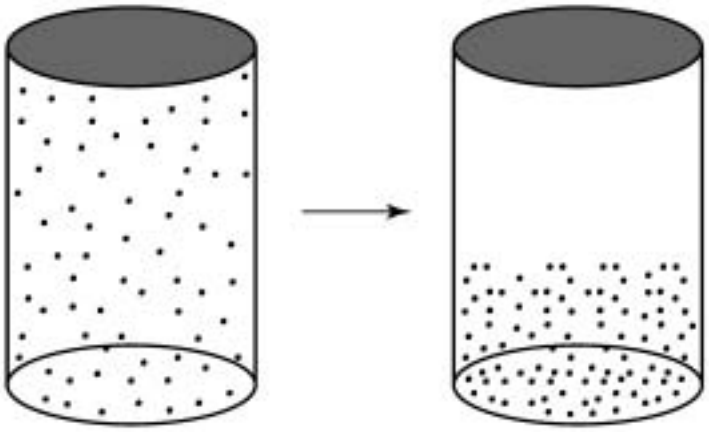
A skeleton type

B eye color

C body size

D hair length

3 The diagram below represents the arrangement of the molecules of a substance inside a sealed container.



The change in the arrangement of molecules shown in the diagram could have been caused by

A increased volume.

B decreased pressure.

C increased mass.

D decreased temperature.

4 Which of these is one way that theories are different from laws?

A Theories are more widely accepted.

B Theories require fewer experimental trials for support.

C Theories can have exceptions.

D Theories are based on mathematical models.

5 Which of the following is a problem that keeps scientists from knowing the complete impact of humans on the environment?

A Records have only been kept in recent history.

B Earth's surface is continuously changing.

C Large temperature differences exist around the world.

D Ocean currents erode shorelines.

6 **A mutation in which of these cells will cause changes in the offspring?**

A kidney

B blood

C skin

D gamete

7 All of the following are credible sources of scientific information **except**

A diary entry.

B encyclopedia.

C journal articles.

D textbook.

8 Which of the following events is caused by forces under Earth's surface?

A hurricanes

B surface currents

C sea breezes

D tsunamis

9 The chemical formula for methane is CH_4. How many atoms of hydrogen are in six molecules of methane?

A 4

B 6

C 10

D 24

10 Which of these generalized chemical equations best represents the process of photosynthesis?

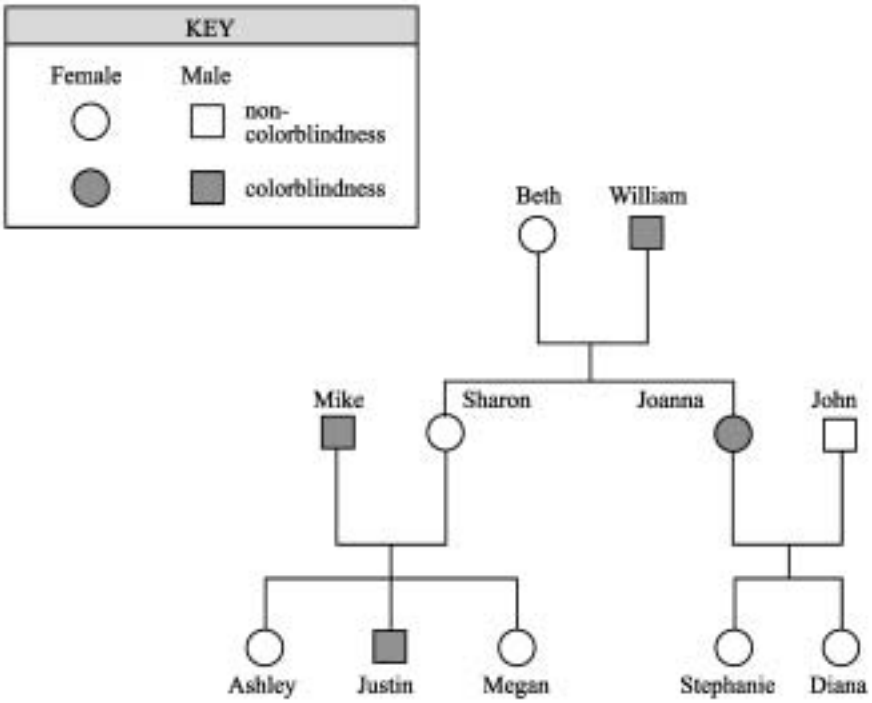
A water + carbon dioxide + light energy → glucose + oxygen

B oxygen + water + glucose → light energy + carbon dioxide

C oxygen + water + light energy → glucose + carbon dioxide

D glucose + water + carbon dioxide → light energy + oxygen

11 Colorblindness is a sex-linked genetic trait. The pedigree chart below shows the trait of colorblindness as it occurred in three generations of a family.



According to the chart, what is the chance that a son born to Joanna and John will be colorblind?

A 0%

B 25%

C 50%

D 100%

12 Rotation of Earth causes winds in the northern hemisphere to

A cool quickly.

B move west.

C move counterclockwise.

D become saturated.

13 The table below shows the freezing and boiling points of four organic molecules.

Freezing and Boiling Points of Organic Molecules

Chemical	Freezing Point	Boiling Point
Acetic Acid	16.6°C	118.5°C
Acetone	−94.8°C	56.0°C
Benzene	5.48°C	80.15°C
Ethanol	−114.5°C	46.3°C

Which chemical has the smallest range of temperatures between the freezing point and boiling point?

A Acetic Acid

B Acetone

C Benzene

D Ethanol

14 Which of the following phenomena is best described by Newton's law of inertia?

A A large rock is harder to move than a small rock.

B A person jumping in the air will come down.

C A ball thrown at a wall will bounce off.

D A large planet has a stronger gravitational attraction than smaller planets.

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15 Which of these can cause the horizontal speed of a sound wave to decrease?

A increased temperature

B entering a denser medium

C decreased noise interference

D leaving a louder source

16 1s is to 1p as hydrogen is to

A helium.

B beryllium.

C lithium.

D boron.

17 Which of the following is a possible set of blood genotypes for parents with a child with type O blood?

A AO

B AB

C AA

D BB

18 All of the following help shape landforms **except**

A river currents.

B temperature change.

C plant growth.

D moon phases.

19 Which of these properties of water makes it a good solvent?

A high specific heat

B low boiling point

C low density

D high polarity

20 Which of these cell types will most likely have the largest number of mitochondria?

A liver

B nerve

C muscle

D blood

Item Number	Reporting Category	Ability Level	Answer Key
1	C1	A1	B
2	C2	A2	A
3	C1	A2	D
4	C4	A2	C
5	C3	A3	A
6	C2	A2	D
7	C4	A1	A
8	C3	A1	D
9	C1	A2	D
10	C2	A1	A
11	C2	A3	D
12	C3	A2	B
13	C4	A2	C
14	C1	A2	A
15	C1	A3	B
16	C1	A3	D
17	C2	A3	A
18	C3	A2	D
19	C3	A2	D
20	C2	A2	C

Introduction

Because writing as a meaning-making activity not only impacts all academic subject areas but also has many real world applications, Nevada began assessing this critical skill twenty-five years ago. From a high school exit exam that measured minimum competency, Nevada's Writing Assessment Program has expanded into a developmental continuum for grades four and eight as well as high school that guides students and teachers through the process of becoming writers who can effectively use their skills in a variety of contexts.

The Writing Assessment Program

Nevada's Writing Assessment Program at the state level consists of three parts: a fourth-grade analytically-scored writing sample, an eighth-grade analytically-scored writing sample, and the holistically-scored Nevada High School Proficiency Examination (HSPE) in Writing, a requirement for receiving a high school diploma. The first two assessments at the fourth- and eighth-grade levels are intended to be primarily diagnostic in nature, providing information to teachers, students, and parents about an individual student's strengths and weaknesses on a single piece of writing based on the traits of ideas, organization, voice, and conventions. This information can help drive writing instruction in a very positive way, giving teachers necessary data as well as a language that allows students and teachers to define and discuss the essence of good writing.

The Nevada HSPE in Writing, a direct performance-based assessment, requires students to write to two prompts: one narrative/descriptive and one persuasive/expository. The student writing is then scored holistically by Nevada teachers who have been trained to use the six-point rubric that reflects the following Nevada's English Language Arts Content Standards 5.0, 6.0, and 7.0:

Content Standard 5.0: Students will write a variety of texts that inform, persuade, describe, evaluate, or tell a story and are appropriate to purpose and audience.

Content Standard 6.0: Students will write with a clear focus and logical development, evaluating, revising, and editing for organization, style, tone, and word choice.

Content Standard 7.0: Students will write using standard English grammar, usage, punctuation, capitalization, and spelling.

A copy of the scoring rubric may be found at the end of the section and on-line at:
http://www.nde.state.nv.us/sca/standards/writing/Holistic%20rubric.html

This rubric delineates performance standards for ideas, organization, voice, sentence fluency, word choice, and conventions. A score of 4 or better is considered reflective of proficiency in writing while a score of 3 or fewer indicates a lack of proficiency. As with the reading and mathematics state assessments, the HSPE in Writing assesses only a sampling of the English Language Arts (ELA) Standards. Local assessments remain an integral part of the assessment system to guarantee that students receive the full range of necessary instruction in writing.

Teacher Involvement

A strength of the Nevada Writing Assessment Program is that it has been developed, implemented, and facilitated by Nevada classroom teachers over the past twenty-five years. Classroom teachers adapt, design and continually revise the scoring criteria; they design the writing prompts; they evaluate and choose anchor papers; they lead the scoring sessions; they read and score all the student papers; and they make the classroom connections from assessment to instruction to improve student writing.

Writing Prompts

Writing prompts for large-scale assessments such as the Nevada State HSPE in Writing must be carefully chosen. Students must be able to understand and respond to the prompt quickly and have something to say without further research or assistance. The prompts used on Nevada's HSPE have been submitted by teachers and reviewed by a bias review panel consisting of educators, community representatives, and members of special populations so that the perspectives and needs of all of Nevada's students will be considered.

The following prompts were used for the February 2002 HSPE in Writing for 11th grade, 12th grade, and adult students:

Topic A (Narrative/Descriptive): People learn from a variety of lessons and experiences. Describe an experience from which you learned something.

Topic B (Expository/Persuasive): Some people believe that boys and girls should go to different schools. Decide whether you think it is a good idea or not and persuade your readers to agree with your decision.

Some additional prompts that were used last year follow:

Topic A (Narrative/Descriptive): Think about an activity that you participated in or observed where things did not turn out the way you or others involved expected. Write about what happened.

Topic B (Expository/Persuasive): Many famous people, both real and fictional, have been honored by having their pictures on postage stamps. Choose a real or fictional person who you believe deserves this honor. Write a paper that would persuade others that your choice is a good one.

To see other prompts previously used in the writing assessment program, please visit the website at: http://www.nde.state.nv.us/sca/standards/writing/prompts.htm

Test Administration

All high school students take the HSPE in Writing for the first time in November of their junior year. They have at least two hours to write to the two prompts. To ensure that students have an adequate opportunity to demonstrate competency in the HSPE in Writing, the test is given in November, February, April, May (optional administration), and July for 12th grade students and adults who have not yet passed the examination.

Preparing for the HSPE in Writing

A comprehensive writing program sustained throughout a student's educational experience provides the best foundation for proficient writing skills. The following information provides suggestions for preparing students for writing assessments.

Provide practice sessions of writing:

- in different modes.
- to prompts for a variety of audiences and purposes.
- in timed situations.

Share scoring rubrics and examples of writing that meet the criteria:

- in single traits.
- using two or more traits.
- applying a holistic rubric.

Have students practice scoring and discussing examples:

- in large and small groups.
- as an individual/center activity.

Structure opportunities for students to self-evaluate writing using the rubrics in:

- personal reflection with portfolio assessment.
- teacher-student conferences.
- peer review situations.

Model writing techniques as a group, and then allow sufficient practice time to:

- imitate and experiment.
- reflect and revise.
- share with others.

Consider individual parts of the process, i.e., only introductions, conclusions, transitions, generating and organizing ideas, or editing techniques, because not all writing:

- needs to go completely through the writing process.
- should eventually be published.
- must be shared with writing groups.

Create group and/or individual checklists for:

- revision practice.
- editing procedures.

(Note: revision and editing are different operations.)

Write for and with your students on a regular basis to model the craft of writing.

Read aloud for and with your students on a regular basis to examine and discuss those writers whose craft you most admire.

Trait-by-Trait Tips

Ideas and Development

Quality, not quantity, is the hallmark of good idea development. It is using precise information with specific details at just the right moment that makes for an excellent piece of writing.

In whole group and small groups, help students to carefully understand and explain what the prompt might be asking for and what strategies could best be used in responding. Then experiment with pre-writing tactics: clusters, lists, word associations, drawings or diagrams, monologues, freewrites, etc., so that a variety of tools will be available to produce ideas.

Organization

This is often the trait that provides the most difficulty for students. Once ideas are generated and main points are determined, students need information on various organizational patterns, i.e., time or spatial orders or most/least important. They also need techniques for framing their ideas once the order is established: outlining, arrows, color-coding, post-it sorting and/or graphic organizers can be used to build the framework for reasons/ideas including the "hamburger paragraph" and the five-part essay. Students need practice with a variety of introduction styles as well as formats for conclusions.

Voice

An understanding of appropriate diction and style for audience and purpose are part of voice, as is the individualistic, expressive flair that demonstrates ownership of a piece of writing. Writers with voice show strong awareness of audience and can purposely use voice to influence the response of the audience. Direct students in using vivid word choices to "show" rather than "tell" readers about ideas.

Conventions

Students can be coached in how to silently "read aloud" their pieces to listen for errors or irregularities in their writing. Share proofreading strategies, i.e., reading for only one type of error at a time, e.g., punctuation, or reading from the end to the beginning, or isolating one section at a time for careful perusal. Students may make corrections on the original drafts of their writing tests, provided they are done neatly and legibly. This is important during a timed writing assessment, as there is often not sufficient time to recopy when an additional error is discovered.

Lower-scored papers tend to:

- provide generalities that sound like a list.
- omit specific details.
- ramble and get off track.
- offer no recognizable organizational structure.
- have difficulty with sentence formation and include fragments and run-ons.
- include errors in spelling and grammar that distract the reader from the ideas.

Higher-scored papers tend to:

- have a clear focus and stay on topic.
- include fresh, original ideas and language.
- organize and elaborate ideas in ways that engage and maintain interest.
- use standard conventions correctly and creatively.

Scored Sample Papers

On the following pages, scored sample papers with annotations have been provided to give a clear understanding of proficient writing on the HSPE in Writing. The holistic rubric at the end of the section was used in scoring these papers and should be referred to for a better understanding of what is expected from students in the Nevada High School Proficiency Examination in Writing. Scores of 4 or better are required to pass the HSPE in Writing. The sample papers that follow provide examples of papers for each of the scores on the rubric for a narrative/descriptive prompt. Annotations following each sample explain the score.

Eleventh Grade Sample Papers—Topic A

The papers on the following pages were written by high school juniors in response to the following prompt:

Because middle school or junior high is so different from high school, many freshmen or sophomores have some trouble adjusting to high school. Explain some of the most important of these differences to an incoming freshman or sophomore so that his first year of high school will be successful.

The papers have been retyped maintaining the original wording, spelling, punctuation, sentence structure, and paragraphing.

11-A-6

Writing Test—Topic A

Of course you're pleased that you are no longer in piddly junior high. You no longer have to deal with the same old obnoxious students that you've gone to school with for three years, for you are going to high school. You feel so warm and bubbly inside, because everything is going to be simply grand. You'll become (or date) a cheerleader, and you'll be valedictorian. You will be the most popular guy/gal in the school, if not in the history of school itself. You can't stop singing "Everything Is Beautiful," because everything is. Am I right?

However, you should stop all of the daydreaming and romanticizing about high school life. Trust someone who has been chin deep in it for three years: it's rough. There are tons of things to worry about.

On the top of the list is the avoidance of bodily injury. That problem has a simple solution: don't make direct eye contact. It may be construed as a challenge to someone's prowess, resulting in several broken bones.

Secondly, there are grades to fret over. You may think you had to worry about grades in junior high, but that was nothing. These marks mean the difference between graduation, college, a good job, and a happy life, or an eternity of working at International House of Grits.

Lastly, there is a social life. Really, who needs popularity? You do, that's who. You must carefully choose which organizations you join, which clothes you wear, and which people to associate with. These decisions must be made in the first ten minutes of high school, lest you be branded an antisocial loser pig.

As you can see, high school is not as rosy as you first thought. However, if you play your cards right, you may live through it.

Six papers are creative, original and insightful. They surprise the reader with words and phrases and with their twists and turns. Lines make us laugh, sigh with recognition, and perhaps even disagree.

While a *six* paper does not have to be perfect, this 11-A-6 example shows a writer in nearly complete control. She begins by painting a mental picture of an idealized high school experience and follows that with a warning. With tongue-in-cheek throughout, she warns of the pitfalls of high school. The organization is unobtrusive, but certainly effective. Each of the three warning paragraphs contains some wise advice, or more accurately some wise-cracking advice. Truly, all the parts of this piece work together to form an impressive whole: the ideas are creative, and often very funny; the organization is

effective and sophisticated; the personality of the writer shines through her words brightly; and mechanics and grammar are handled with ease.

Topic 11-A-5

Writing Test—Topic A

> *My little freshmen friends are no longer in middle school, eh? Well don't worry, high school is much better. Prepare to mature very quickly the first year, because there is much to be experienced. People in high school begin to differ much more than they did in middle school and everyone needs to deal with everyone else one way or another.*
>
> *I would recommend to my little friends to avoid violence. Although sometimes an alternative, violence can lead to counter violence which can lead to death. Remain disciplined to achive whatever goals you have set for yourself (you, being the freshmen) and not what goals others have set for you.*
>
> *The only other thing to do in high school is relax. I'm not saying become inert and weak-minded, I'm just saying take five minutes out a day to breathe properly and realize high school isn't the end (thank god).*

A *five* paper is generally a strong paper that is very coherent and organized. The writer seems to be in control of where he wants the paper to go, although the sense of control is not so strongly apparent as in a *six*. The reader gets an idea of the writer behind the words; the paper has a personality, a voice. These are not perfect, error-free papers; the mistakes that are made are few and/or minor.

The 11-A-5 example starts off with a wonderfully cynical opening sentence directed toward that innocent, the freshman, and is followed by another dire warning. It is here that we really encounter our first minor problem with this piece, because the author suddenly seems to lose his focus a bit. We are not quite certain what he might mean by his statement, "people in high school begin to differ much more than they did in middle school." As readers, we would appreciate some explanation of this rather cryptic paragraph, thus restoring some of the sense of control noted earlier, but again he seems unable to maintain the tone throughout. In his next sentence, his reference to violence suddenly becomes quite serious. Although his observation is definitely true, we are left wondering if we are to see this as humorous. This author's control is wavering. The control returns, though, in that final paragraph where he advises the freshmen to relax, perhaps his best advice of all. So, even though this author cannot manipulate language as well as the author of the *six* example, we still have a piece that is quite well done.

Topic 11-A-4

Writing Test—Topic A

> *Being a freshman in high school has many challenges. Since you are the smallest in the school, you tend to get pushed around or bumbed in the hallways. You also get put down by older students. Being a freshmen in highschool has its advantages. like in middle school you had to eat in the lunch room Well in highschool you can eat any where you want. Just as long as you are back in time for your next hour class. Anther advantage is you can drink soda for lunch and if your teacher is cool you can drink in class. Also if you teacher is cool you can chew gum or eat candy in class. But you can't bring walkmans to class or anywhere on school campus. Being in Highschool they do give a lot of work. Especially if you have a D.S. or Distinguished Scholor class. You Usually get a lot of work in Engliesh and Math. But it's always fun to goto an elective class. So stay in school and survive that freshmen year*

Four papers are adequate; they deal with the topic and they are satisfactory, yet they do contain mistakes. There are some grammar and spelling errors, but overall they are still adequate papers. They are polished enough to be acceptable, but they don't display any qualities that make them outstanding.

"Adequate" is about all the enthusiasm we can muster for example 11-A-4. We see clearly that this piece addresses the topic, as the author offers advice to an incoming freshman. The author seems to have a pattern of organization in mind. We can see that the author first discusses the challenges of high school and then the advantages. This pattern does break down somewhat near the end of the piece where he seems briefly to revert to the challenges portion of the pattern rather than concluding with the advantages section. This occurs when he discusses the homework one would have to complete in high school. However, this slight breakdown in the organizational pattern is not serious enough to cause any misunderstanding or confusion on the reader's part. Usually the language is clear enough that we understand all the author's points, but there are also some instances of ineffective diction, as in the sentence, "Being in high school they do give a lot of work." Grammar and mechanics' errors are numerous. Sentence fragments and misspellings are frequent. Despite our lack of enthusiasm for the quality of the piece, however, we must admit that the student has successfully conveyed his message for his younger counterpart to "stay in school and survive that freshmen year."

11-A-3—Topic A

There are a lot of differences between High School and Middle School. In High School for the most part teachers leave you alone, they don't bother you what you should and should not be doing. You beome more involved in High School with the different clubs and sports, and at lunch with all of this you don't just sit around. You meet alot more people, and it is alot easier to become aquainted with someone. High School students are do tend to be ruder then Middle School Students espically the Sophmores. In High School you are not just placed into a course. You choose which Math, Science, and English class you take. There are more elective cources like Art, Drama, Music, Computer Programing etc. As you can see HighSchool has its bad and good points, but it is usually alot more fun.

The *three* papers tend to use limited language. No perceptions or surprises reach out to engage the reader. There are mistakes in sentences, including incorrect punctuation and run-on sentences. The ideas are not developed in an interesting way to make the reader want to continue reading. If a paper is scored a *three,* it is considered inadequate.

The 11-A-3 paper "addresses the topic but does not display mature style or well-developed content." The language here is "limited, simplistic, mundane, or otherwise inappropriate," as is certainly apparent in a sentence such as, "High School students are do tend to be ruder then Middle School students espically the Sophmores." In addition, the sentence structure of this writer is often convoluted, bordering on "run-on," as in the statement: "In High School for the most part teachers leave you alone, they don't bother you what you should and should not be doing." These kinds of errors are frequent enough that even though they do not "impede meaning," they certainly demonstrate "consistent misunderstanding of the conventions."

11-A-2—Topic A

An ulumne of the his or her primary years in highschool has, by the ninth or tenth grade, generally has experienced, prior to highschool, change in his/her schooling, whether to be that of transfering from one school to another or that of graduating from grade school to middle school. It would seem practical, simply to be able to lay out a system of regulations which must be obeyed in corelation to a list of resulting consequences for those incoming freshmen/sophmores.

The authors of *two* papers attempt to address the topic, but usually haven't conceptualized a clear idea of where they want their ideas to go. The pieces have few/no details and very little development to draw a reader in. There are serious problems with sentences, such as run-ons, fragments, and incorrect punctuation that interfere with a reader's understanding and enjoyment of the piece.

Example 11-A-2 most definitely "reveals serious and persistent problems in communications." Although we cannot really say that the language is "simplistic," as the rubric suggests, we can certainly see that it is "inappropriate." This student seems to use language carelessly, without concern for meaning: "It would seem practical, simply to be able to lay out a system of regulations which must be obeyed in corelation to a list of resulting consequences for those incoming freshmen/sophmores." We can guess that this means something such as "new students must obey the rules," but we're still not certain. We might also imagine that this student is attempting to impress us with his vocabulary. Hopefully, the score of *two* on this piece sends him the message that he must have an idea and state it clearly in order to achieve a passing score on this test.

Topic 11-A-1—Topic A

the many things for thoos peoples when will they incoming to high shool of the middle school or Junior high, are very different for what in this school are here bery much people big which they. The other's differences For thoos peoples is the time of enter, because is before of the hour, what thoos student's come to. Last school. When will thos student's come here to this school the firs day's of class they will only, whant to play or don't enter to he class or other's things. They don't will want study, but can be no check the home work's or don't puch attension a the teacher's in the class room. thoos student will thing what the rules of this school is iqual thant the other's school, the principil when will enter the other year, he whant take more security's to puch in the school, take more time to student's puch many programs hispanish or others things. the firs day of class, her explain the rules that new studens he talk to we the new program's or new class, tell we the very importan for we the credits.

Papers scored as a *one* are extremely weak. The writers do not make it at all clear to the reader what they are trying to say. Ideas are very difficult, if not impossible, to follow and understand. There are so many errors in all areas that getting through the paper is largely a matter of decoding.

The 11-A-1 example "overwhelms the reader with serious violations of sentence structure, grammar/usage, and mechanics." After we have completed the first sentence of this piece, we know that this writer has extreme difficulty communicating in writing: "the many things for thoos peoples when will they incoming to high shool or Junior high, are very different for what in this school are here bery much people big which they." While we are fairly sure that the author is addressing the topic, since we see the word "school" repeated several times, we wonder about the rest of the ideas and development of this piece. Probably the most blatant problem is this student's confused diction, leading us to guess that his/her first language is not English. Despite the fact that we are sympathetic to this possible difficulty and would like to provide encouragement, we cannot allow this to overshadow the fact that this writing is not proficient.

Eleventh Grade Sample Papers—Topic B

These papers were written by high school juniors in response to the following prompt:

It seems that money plays an important role in every person's life. Tell about an experience in which you earned, lost, spent, saved, or were given money. Also be sure to tell what you learned from this experience.

As in the previous examples, the students' original spelling, punctuation, paragraphing, and capitalization have been maintained.

11-B-6

I have never been good at spending money wisely. I'm too impulsive. If it looks nice, buy it, was my motto. I cannot go to a mall and leave with money in my pocket. This was my basic problem: I felt that leaving a store with money in my pocket was some kind of vilinnous act so as a rule I never did. Instead of just buying what I needed, I would buy extras I did not need, and whatever else caught my eyes. Spending money like this was no problem until my mom decided to change my ways. The day before school began I went to the mall to buy a pair of shoes. The shoes cost ninety dollars, and my mom sent me to the mall with a one hundred dollar bill, and a warning. "Bring back the ten dollars for gas money , or you will walk to school all next week," said she. I bought the shoes, but being foolish I also bought a nice shirt for ten dollars, thinking my moms warning was a jest. Upon returning home, I found her warning to be true, and that I would be walking to school the first week. No problem, thought I. How bad can it be? That week I walked through mud, dirt, water, gravel, and even through an equine leftover. This ruined my new shoes and was important to me because it taught me to less impulsive.

The 11-B-6 example is not as strong as the 11-A-6 paper; it therefore serves to illustrate that there is a range of responses within a single score. While 11-A-6 is an extremely strong *six,* 11-B-6 may fall in the lower part of the *six* range. Clearly, this is an excellent writer who has crafted an effective response to the prompt. He begins by identifying his major flaw in his ability to handle money matters: "I'm too impulsive." With this organizing idea, he proceeds to relate an anecdote meant to illustrate this impulsiveness. He draws in his reader with his mother's warnings and then brings home the final irony of his experience in his closing sentence. Because he had no money, he had to walk to school for a week, thus ruining his new shoes. Although there are some grammatical errors in this piece, this is a writer who can organize his thoughts, illustrate them with specific examples, and even demonstrate his understanding of the difficult idea of irony.

11-B-5

Every sixteen year old feels the need for a car the day they turn sixteen. I know I did. I started working at the age of fifteen so that I could have saved up enough money for a down payment on a new Camero. I wanted to make payments and pay the high insurance that I would of had to do in order to keep my new Camero. The only problem (I thought I was faced with), was seeing how I am a full time student involved in cheerleading, volleyball, track and student council how would I work all of the time needed to pay the bills on my new Camero? I wasn't thinking logically. I just wanted a new Camero for all of my friends to ohhh and ahhh at. I continued to work, but as disappointed as I was at the time, my new Camero ended up to be a Plymouth-Duster. I eventually was satisfied with my car. I am now at the age of seventeen glad that I didn't get my new Camero.

The author of 11-B-5 shows a strong sense of ideas. This writer has obviously learned a hard lesson about the dangers of attempting to impress her friends with material objects. Through her experience, she has learned to accept that sometimes "fantasy Camaros" must become "real-life Plymouth Dusters." Although there are some fairly serious grammatical problems here: "would of had to do" and a pronoun-antecedent problem in "every sixteen year old feels the need for a car the day they turn sixteen," the overall organization and clarity of the piece is very good. Although this writer does not attempt much in the way of manipulating language for effect, she still manages to tell her story in a way that is clear and comprehensible. There are some strong moments in this piece, such as the sentence, "I just wanted a new Camero for all of my friends to ohhh and ahhh at." Not only has she reached a rather mature understanding of her own actions, but she has also expressed that understanding in a clever, original sentence. This writer's ideas are showcased here. The style of the piece is secondary, but there are still enough moments of excellence to keep the piece in the *five* range, even if it is the low end of the *five* range.

11-B-4

Money to me is like a drug and from time to time can be very adicting. Especially when your in desparate need of money and you have to make a choice of whats right and whats wrong.

I remember this day like it was yesterday. But it was a year ago. And I was in desparate need of money for my family to pay for bills and food. That day I just got off from my job at Park Lane Mall walking in the parking lot to the car. By my car door there was a purse that was lost on the ground with no owner around. I looked to see the Identification of the owner and found six, crisp, and clean one hundred dollar bills in the purse. I was so happy at the moment because this was exactly what I needed to pay my family's bills and get us out of debt, but something came over me and I realized my heart said no. Because my mother didn't teach me to be dishonest.

So I turned it into the police and come to find out, two weeks later my mother hit six hundred dollars on the slot machine. So what goes around — comes around!

Example 11-B-4 is a clear instance of a writer who has great strengths in some areas of his writing, yet who also exhibits some overwhelming weaknesses. The ideas of this particular piece are compelling, especially the powerful opening sentence. The strength of ideas is also apparent in his description of those six "crisp, and clean one-hundred dollar bills in the purse." We have a clear image of a young person standing there in the parking lot, wrestling with options for that money. Despite the clarity of this author's thought processes, we cannot help but notice the serious flaws in grammar. The spelling and punctuation are quite problematic, and the piece contains numerous sentence fragments. Unlike 11-A-4, which is adequate in all aspects of writing, 11-B-4 is excellent in some ways and abysmal in others. One can see that this author would benefit from an analytical trait model summary to help isolate the weaknesses and build on the strengths of this piece.

11-B-3

Every time I got money, I spent it. Even if it is earned or gave to me from someone. My dad yells at me for doing this. Buy why save money, when you are just going to end up spending it anyway.

Now I realize what things I could of bought if I only saved that money, instead of spending it on junk food or something. I need to learn how to save money before I go out on my own. Because one day I will need something and I won't have the money for it.

The problems with example 11-B-3 are not so much in the area of mechanics and grammar as in the realm of ideas. This paper "displays minimal development," as the rubric suggests in its description of a *three*. The writer realizes that her problem with money results from spending funds foolishly, but she gives us very little detail about the exact nature of the problem. She does say that she would often spend money on "junk food or something," but beyond that, she does not provide much support for her general statements. She realizes that she does need to learn how to save money, "Because one day I will need something and I won't have the money for it," but again, she has no specific plan of operation in mind. We would simply like this author to fill in those missing details. This paper with its lack of detail and consistent problems in grammar displays serious enough weaknesses to deem it not proficient.

11-B-2

> *The experience I have Learned when I have money my grandma gave me $80.00 for my Birthday and I kept on spending It. Before I knew It my my money was gone. One Time I had $20.00 and I Lost It. I should have put It in my wallet and kept It in there when I got home I got in trouble but that taugt me not to put money in Empty pockets. when I go out I will put my money In my wallet.*

In addition to language that is "highly limited, simplistic, or otherwise inappropriate," the 11-B-2 paper "contains serious flaws in development, organization, and coherence." The writer begins by telling about an experience when his grandmother gave him $80.00, but rather than explain this incident in any detail, he soon redirects readers to an occasion when he had $20.00 and lost it. In addition, this author commits "consistent violations in sentence structure, grammar/usage, and mechanics that impede understanding." We can see this clearly in the following excerpt: "I should have put It in my wallet and kept It in there when I got home I got in trouble but that taugt me not to put money in Empty pockets." Not only does this author run complete sentences together, but he also ignores some basic rules for capitalization

11-B-1

> *My experience with money was wen I had savd up a lot of money and I bot a gitar. Then a feau years later I bot a amplofir. It is important to me becuss I uss it a lot and it is fun to plye with*

The 11-B-1 paper is "extremely weak" especially in terms of development. The author mentions that he "had savd up a lot of money and [he] bot a gitar." Rather than giving us any notion at all about why he did this, he simply goes on to another experience. "then a feau years later I bot a amplofir." There is virtually no development of ideas and those ideas that are present are obscured by the overwhelming grammatical errors. Again, we do have enough mention of the topic to convince us that the writer does understand the prompt, but this student's writing definitely "fails to provide adequate information."

Holistic Scoring Rubric

SCORE "SIX"

A six paper is superior. It exemplifies **ALL OR MOST** of the following:

- Focuses and develops ideas in a sustained and compelling manner, showing creativity and insight.
- Clarifies and defends or persuades with precise and relevant evidence; clearly defines and frames issues.
- Effectively organizes ideas in a clear, logical, detailed, and coherent manner using appropriate structures to enhance the central idea or theme.
- Demonstrates involvement with the text and speaks purposefully to the audience in an appropriate, individualistic, and engaging manner.
- Uses multiple sentence structures and word choices effectively and with a sense of control for stylistic effect.
- Commits few, if any, errors in standard English rules for grammar/usage and mechanics.

SCORE "FIVE"

A five paper is distinctly above average. It displays **ALL OR MOST** of the following:

- Focuses and develops ideas in an effective and detailed manner.
- Defends and/or persuades with important and relevant evidence; defines and frames issues.
- Organizes ideas clearly and coherently using structures appropriate to purposes.
- Communicates a sense of commitment to the topic and to the audience's involvement.
- Uses varied sentence structure and word choice effectively.
- Commits few errors in standard English grammar/usage and mechanics.

SCORE "FOUR"

A four paper is adequate. It exhibits **ALL OR MOST** of the following characteristics:

- Adequately focuses and develops ideas with detail.
- Defends and/or persuades with support and clarity, using relevant evidence.
- Organizes ideas in a satisfactory manner with adequate coherence and logic.
- Uses a voice that is appropriate to audience and purpose.
- Uses a variety of sentence structures and word choice, but occasionally displays some wordiness or ineffective diction; sentences may be predictable.
- Commits some errors in standard English grammar/usage and mechanics that do not impede meaning; indicates basic understanding of conventions.

SCORE "THREE"

A three paper is inadequate. It is clearly flawed in **SOME OR ALL** of the following ways:

- Focuses, but may not display mature or well-developed content.
- Attempts defense or persuasive stance but position is unclear and/or evidence is brief, tangential or based solely on personal opinion.
- Displays minimal organization; contains irrelevancies, digresses, rambles, or lacks logic.
- Lacks sincerity of purpose in the writer's attempt to involve the audience appropriately.
- Uses sentence structure and word choice that are somewhat limited, simplistic, mundane, or otherwise inappropriate.
- Contains flaws in standard English rules of grammar/usage and mechanics that do not impede meaning; indicates some consistent misunderstanding of the conventions.

SCORE "TWO"

A two paper is very weak. It reveals serious and persistent problems in communications. It compounds the weaknesses of the 3 paper in **SOME OR ALL** of the following ways:

- Lacks focus and development; may list items with little or no supporting detail.
- Defends or persuades from a stance that is unclear or absent; evidence is vague or missing.
- Contains serious flaws in structure, organization and coherence.
- Attempts, but fails in the writer's attempt to involve the audience appropriately.
- Uses sentence structure and word choice that are highly limited, simplistic, or otherwise inappropriate.
- Displays consistent violations in standard English rules of grammar/usage and mechanics that impede understanding.

SCORE "ONE"

A one paper is extremely weak. It has few redeeming qualities. It at least mentions the topic, but generally fails to communicate with the reader. It illustrates **SOME OR ALL** of the following:

- Simply repeats the topic or fails to provide adequate development.
- Fails to establish a position and/or develop persuasive view; evidence is not apparent.
- Shows almost no structure, organization or coherence.
- Does not address the audience appropriately.
- Uses limited and/or immature sentence structure and word choice.
- Overwhelms the reader with serious violations of standard English rules, grammar/usage and mechanics.

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